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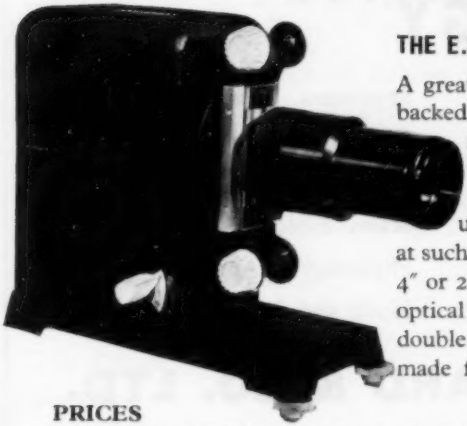

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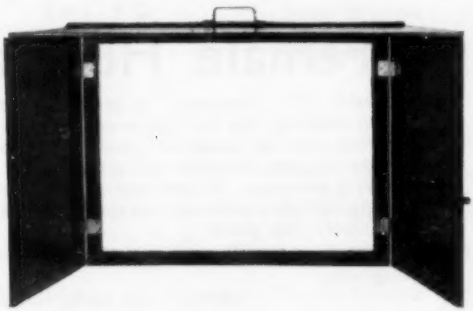

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Special Edition on

VISUAL EDUCATION

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Editorial

MEANS AND ENDS

THIS symposium on visual education has been compiled in co-operation with the United Nations Educational Scientific and Cultural Organization. It is a book as much of philosophy as of technique. The authors writing from many parts of the world are as concerned with what they are doing with their illustrations as with how they have done them. To the good illustrator means and ends are indivisible.

Since the dawn of human history the outward appearance and technique of illustration have changed very little. The cave artist of 30,000 years ago knew as much about the job of representation as we do to-day. The philosophy, however, has changed continually. As in all human matters, present attitudes are compounded of a present-day social purpose in which the residue of ancient attitudes can still be easily detected.

What were these ancient purposes? Why did cave men paint exquisite animal portraits and hunting scenes in the deep recesses of Magdalenian caves? We can only assume that the purpose was magical. Their habitat was the forest, their livelihood hunting. The drawing for them was part of the thing drawn, and by depicting the arrow piercing the heart of the beast they would not only influence the beast to be discovered but also the arrow to find its mark. This magical use of illustrations is still current in the drawings of witches, children and neurotics. It is partly this quality which enables us to respond emotionally to pictures and to identify ourselves with characters in them.

On an Egyptian tomb tablet of 2200 B.C. appears this inscription: "I knew my art, how to represent the forms of going out and returning so that each limb was in its proper place. I knew how the figure of a man should go, the poising of the arm to bring the hippopotamus low, the carriage of a woman. I knew how to make amulets against fire burning or floods drowning." In this little epitaph a conscious association exists in the artist's mind between his representational and magical abilities. In the tombs of ancient Egypt paintings depicting servants and retainers were clearly considered adequate substitutes for the more ancient

custom of burying the actual servants and retainers. Pictures and symbols were very real and useful to such people in the same way as letters and numbers are to us.

With Minoan and Etruscan art came the first interest in depicting the personality of man, and this flowered into the classical period of Greece. This secular humanistic use of art for the glorification of man and the decoration of his habitations ceased with the dark ages following the downfall of Rome, but in its golden age it achieved the most complete realism, inventing endless subtleties to make both the reality of form and of personality more real, and in the minds of many the standards it set of perfection in human beauty are still valid.

The philosophy of the Middle Ages was not concerned with reality but with belief. The mind of mediaeval man was focused on the glory of God and his own insignificance. Perspective was forgotten and devotional perspective introduced. God was painted large, the angels smaller, the prophets and martyrs next and finally man (usually the people who commissioned the artist) was painted very small indeed and in a kneeling position. Art was used to influence man's feelings, and it was not until Giotto started to illustrate Bible stories and the lives of the saints that any intellectual content appeared. With this intellectual emergence came perspective and proportion and the search for models from classical Greece. The tide of the Renaissance which came to full flood with Leonardo da Vinci, who developed the intellectual and emotional purposes of art to their highest level, is still flowing fast.

In the contemporary illustration we can recognise influences from every period and philosophy of art. We are using at one and the same time techniques involving the utmost realism and the extremes of abstraction. The man in the street is expected to be quite at home with abstract symbols or three-dimensional illusions in motion and sound on the cinema screen, and the artist can quite consciously choose which medium suits his purpose best. The range of visual conventions has vastly increased, but we are not at all sure how these conventions are interpreted by the onlooker. Miss Johnson raises this most pertinent question. Lest we be led astray by the wealth and perfection of our instruments, let us consider our aims and our ethics.

The philosophy of Health Education assumes that people can help themselves to lead fuller lives through greater interest, knowledge and insight into their behaviour in health matters. If illustration has any part to play in the process it must endeavour to fulfil this purpose with honesty and skill. Some aspects of this idea will be covered by pictures of a didactic kind, the sort which state facts as clearly as they can ; other aspects can only be served by pictures which suggest desirable things and stir people's

feelings. Perhaps the most important from our point of view are those which pose problems in an interesting and real enough way to make people react with all their faculties.

The highest purpose of health education, as of all other education, is to enable people to choose for themselves, but choosing is not a simple business. Visual methods in health education can therefore legitimately seek to interest, inform and argue, but should refrain from ready-made conclusions.

We are very happy that we have been able to co-operate with UNESCO in this project, for we feel that our basic aims in fundamental education are similar.

PERCEPTION AND INTERPRETATION

By M. L. JOHNSON, B.Sc., Ph.D.

THOSE of us who are concerned with teaching are very well aware of the difficulties involved in designing a really instructive picture, diagram, graph, or chart; we take care that it shall be striking, attractive (or at least not ugly), and appropriate to its context; clear, unambiguous, with a minimum of irrelevancies: we struggle to make it *mean* what we want it to mean, to make it transmit the information we want it to transmit. The aim of this article is not primarily to discuss the skills so obviously necessary to the artist or illustrator, but rather the difficulties involved at the receiving end, which are far less well recognised. One cannot pop a piece of information (visually or otherwise) into a person's head as one drops a pebble into a well, knowing that it will reach the bottom very little affected by its journey. No, it is "soluble in old experiences", and the meaning it has for the recipient depends on the experiences in which it dissolves, on the associations it makes with all sorts of other notions, or pieces of information. Perception involves *interpretation*, and some understanding of the factors influencing it may help us to present information visually in such a way that it will have *for the recipient* as well as for ourselves, the meaning we wish to convey.

Consider briefly the anatomy and physiology of the perceptual process. What is it that the perceiver actually receives? Whatever is presented to him, whether a picture or a real three dimensional object, it reaches him as a pattern of light and shade impinging on the eye. Of the thousands of minute receptors in the retina, some are stimulated and others not. After a series of relayings of impulses through the central nervous system by a network of pathways whose complexity we understand only enough to gasp at it, we recognise that this pattern represents, or signifies, means, an apple or an orange, a smile or a frown. We have had to learn to interpret these patterns, just as one would have to learn the Morse code before one could decipher a message sent in its dots and dashes. The ease and sureness with which we recognise commonplace things shows how skilfully we have learned to interpret their images, and also allows us to overlook the part which interpretation plays. We are as unconscious

of the series of translations which go on between receiving the visual pattern on the retina and acting on the information we get from it as we are of the complicated chemical changes and interactions by which food received into the stomach is made available for building flesh or providing energy.

Interpretation

The fact that perception involves interpretation can be realised most easily by considering the cases where different people make different interpretations of the same image. An instructive example is given by an experiment in which five experts were asked to look at a series of radiographs of chests and classify them as positive or negative for tuberculosis.[1] They did not agree on all cases; one reader selected nearly twice as many positives as another; 20 per cent of the films called positive by one reader were called negative by another and so on. Further, when each expert was asked to examine the films again after a lapse of two months, there was often considerable discrepancy with his earlier judgement. The instructive points to notice here are first that quite obviously special skills are involved: most people do not understand radiographs at all, they have not learnt to decipher the message as they have with commonplace objects. Secondly, the specialists are attributing "meaning" to the shadows, for to them they indicate something about the health of the patient. They are using the information they have accumulated in the past, that if a chest throws such and such a shadow, it is more likely than not to be tubercular. Thirdly, notice that a judgement of probability is involved here and that different people, or the same person at different times, may make a different judgement of the same radiograph. Fourthly, note that the verdict could be tested by collecting more information, either by taking more radiographs of the chest, or by examining the patient in other ways (e.g., sputum test). Fifthly, it is by continually testing the consistency of his judgement with other information in this way that the specialist learns his skill.

Interpretation of radiographs is not so very unlike the seeing of commonplace things. That this is so is shown by the remarkable series of investigations of perception which have been carried out by Ames and his co-workers.[2] It is unfortunately impossible to do justice here to this work and its full implications for education. Briefly it demonstrates the role of experience in seeing. As a result of seeing commonplace objects we learn to make assumptions about their nature which help us to interpret their images or the images of similar objects which we subsequently see. For instance, both the shape and size of the image which a rectangular object such as a playing card throws on the retina vary with its position relative to the eye. The image will seldom

be rectangular, and while we are playing a game of cards, the image of any card will be continuously changing in both size and shape, as it is put on the table or held in the hand. From experience of all these various images, one learns to make assumptions as to the shape and size of playing cards, and these assumptions help one to interpret the images so that one knows, for instance, just how far to reach to pick up a card. If one is shown an ordinary playing card illuminated in an otherwise dark room, and asked to judge its position, one can do this correctly. If, however, the card is twice the normal size, one judges it to be of normal size and nearer than it really is and if it is half normal size, farther away. In the first case one's assumptions as to the size of playing cards have helped one to get correct information about the position of the card from its retinal image, in the second and third cases, incorrect information. By correct information, I mean that which is consistent with other information, and which can therefore be used as a reliable guide to action: only if one gets correct information as to the position of a playing card, can one know how far to reach to pick it up.

One of the most striking of the Ames demonstrations is of the "distorted room" which, seen through a peephole, looks normal. But when a person comes into the room, he looks tiny or gigantic according to which corner he stands in. If one tries to follow with a stick an electric mouse running across the room, at first one cannot do so, because one's estimations of its position turn out to be wrong; but one modifies one's assumptions as to the nature of the room by finding that they do not lead to effective action, and learns to make more useful interpretations of the image. One learns to see the room as it "really" is, a distorted room, i.e., the information one then gets from the image is consistent with the information one gets by acting on it.

Assumptions

Many of our failures to transmit information correctly are due to misunderstanding on the part of the teacher of the recipient's assumptions; we tend to think the receiver has the same assumptions as we have, or perhaps we overlook them altogether because we are largely unaware of our own. We have seen how, in the conditions of the experiment described above, people fail to take in the information that a half-sized playing card is being shown to them because of their assumptions about the size of the playing card. The new information is not consistent with their experience and they do not accept it; instead, they "see" a normal card at the wrong distance away. Any teacher will have come across examples of this kind of rejection of information that does not fit. In a campaign to eradicate hookworm in a backward area, an attempt was made to get the informed co-operation of

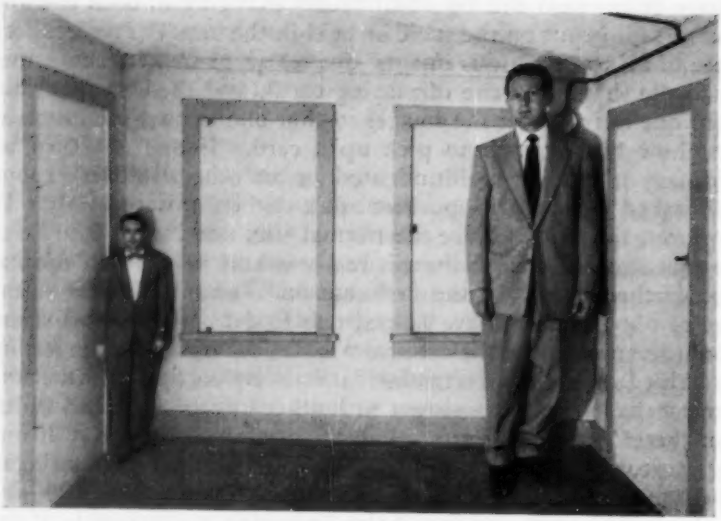

Figure 1a.

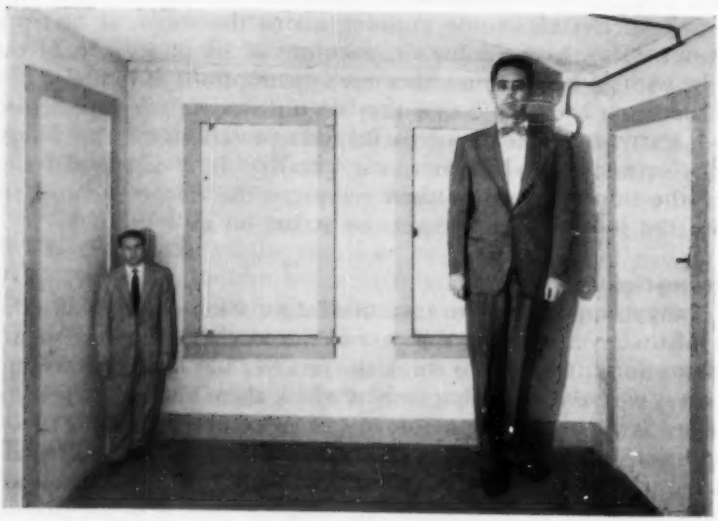

Figure 1b.

The distorted room. Figures 1a and 1b : What one sees when one looks into the room through a peephole. *(Photos courtesy F. P. Kilpatrick)*

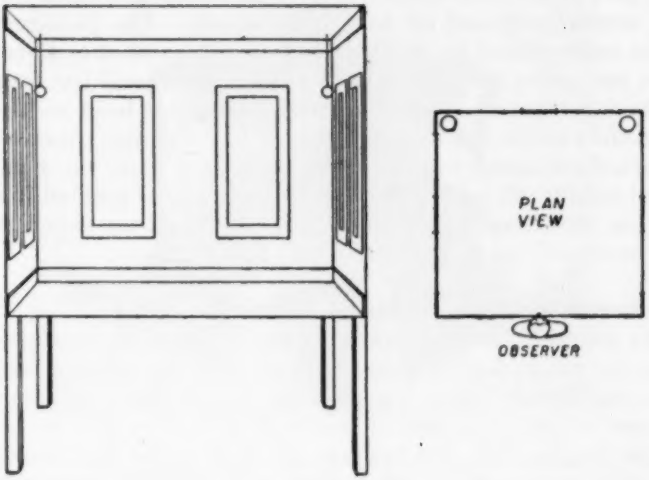

Figure 1c

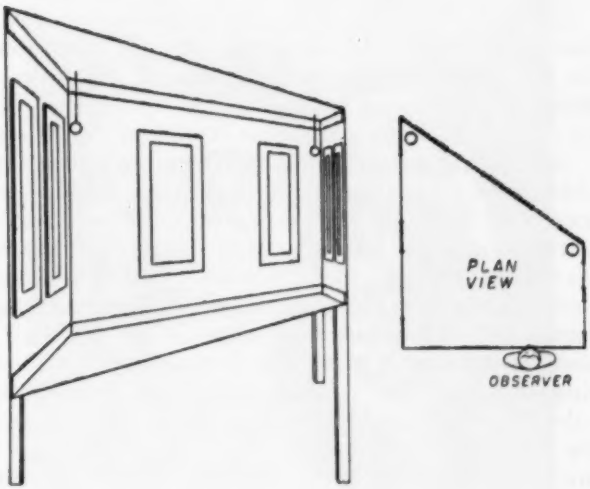

Figure 1d

The distorted room. Figure 1c : as it appears to be. Figure 1d : as it really is. (From E. C. Kelley, *Education for What is Real.* New York, Harper & Bros., 1947.)

the peasants by telling them about the life history of the parasite, and part of the instruction consisted of showing lantern slides of the worms projected on to a large screen. The peasants were quite unimpressed by the demonstration because they knew they were not giving hospitality to lots of worms several feet long and as thick as an arm. When a demonstrator has been accustomed from the earliest age to seeing pictures of the solar system and of a bacterium occupying the same amount of space on a page, it is not to him self-evident how much he takes for granted in interpreting the images. What is consistent with his experience is not necessarily so with the recipient's.

The Continuum from Reality to Abstraction

We see then that perception necessarily involves interpretation, even the perception of "real" things. We are familiar with the idea that certain sorts of perception involve interpretation—the pictures we see in the fire, or in clouds, or in cracks in the ceiling, or the bogies that children see in their twilit bedroom. We recognise that such interpretations vary with the perceiver, and may change with his mood, and we tend to think of visual patterns which stimulate fantasy as sharply distinct from the images of "real" things like chairs and tables. It is, however, more useful to consider them as lying at the two opposite ends of a continuum. We have learned to interpret images at the "real" end of the continuum in such a way that we can rely on the information we get from them and use it as a basis for action —we can sit on the chairs we see, and lean on the tables. When such things are illustrated by photograph or drawing in such a way that the retinal image sufficiently resembles the retinal image of the "real" thing, we interpret it in the same way as the image of the thing itself. For all practical purposes, most of us interpret these images in the same way, we agree about what we see, the range of variation in the information the pattern gives to different people is narrow. At the other, "fantasy", end of the continuum we can place images which different people interpret in all sorts of different ways. These also may be the images of "real" things like clouds, or pictures of them, but the perceiver "sees" them as something quite different. At this end we can place the inkblots used in the Rorschach test (Figure 2), to which individuals react so variously that they can be used as a test of personality. The information got from images at the "fantasy" end of the continuum is not checked by acting on it.

Near the inkblots we could place "abstract" works of art, over which people notoriously differ. Next would come more representational pictures, such as those of human situations used for another kind of personality test (the Murray Thematic Apperception Test) which are differently interpreted by different people

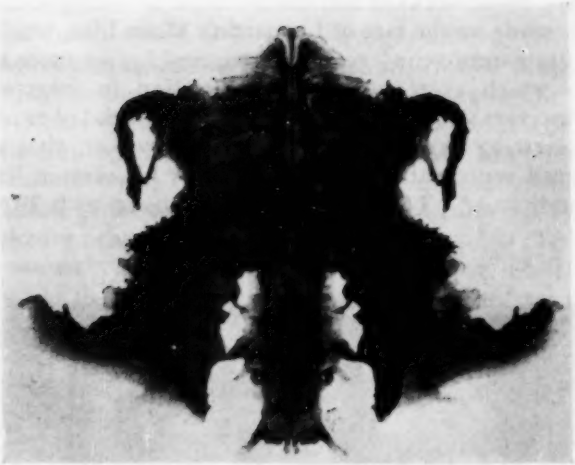

Figure 2. An inkblot used in the Rorschach test. (From H. Rorschach, *Psychodiagnostics*. Hans Huber Publishers, Berne and Stuttgart.)

Figure 3. A picture used in the Murray Thematic Apperception Test. (From Murray, *Thematic Apperception Test*. Harvard University Press.)

(Figure 3). Some works of art which are partly ambiguous, for instance the smile on the face of Leonardo's Mona Lisa, would come here. Still nearer to the "real" end we could place more realistic paintings which give rise to little variation in interpretation among observers with roughly the same background of experience.

An interesting experiment has shown, however, that what is seen in even representational pictures may be affected by extraneous conditions.[3] The experiment was made with Breughel's

Figure 4. *Peasant Wedding*, by Breughel. (Kunsthistorisches Museum, Vienna.)

Peasant Wedding (Figure 4). The subjects were told a story about two families that had quarrelled for generations. After a particularly violent quarrel which ended in the death of the head of one of the families, the heir arranged to marry a woman from the other family, the daughter of his father's murderer. The wedding feast was described, taking place in conditions of restlessness and suppressed excitement. A few days later the subjects were asked to choose from seven pictures the one which was most relevant to the story, and they all chose the *Peasant Wedding*. The story agreed in some respects with the picture, e.g., it described rural festivities occurring at a similar period and place, and some details in the story could be found in the picture. Many other things mentioned in the story, however, were not in the picture, and some were incongruous with it. When the subjects were

asked to recall the picture after a few days or weeks it was clear that their recollections of it were strongly affected by the story. They mentioned details in the picture which had played an important part in the story, e.g. the sheaves of corn on the wall, but ignored others that were equally prominent to the control subjects who had not heard the story. Moreover, they interpreted some items in terms of the story and quite incongruously with the meaning given to them (for the control subjects) by the rest of the picture ; the bridegroom for instance was described as " sad and downcast ", the musicians as men carrying ash-staves, and the crowd at the back of the room as unruly. Subjects who were asked to re-tell the story showed the same kind of effect of selection and distortion according to the picture. The information got from one experience had become associated with, and modified by, that got from the other.

In everyday life or in specific learning situations, pieces of information which may or may not have *useful* relevance to each other become associated and affect each other's meaning. According to the kinds of information which are for each person in some way or other relevant to the new information we want to present, its acceptance in the form in which we want it to be accepted may be helped or hindered. In designing a visual aid we take into account the context in which it is presented as well as the need to make it clear and simple—that is, to prune it of irrelevancies which will confuse and distort. In designing a filmstrip we choose the pictures and arrange their sequence bearing in mind that each picture is not erased from the mind as it leaves the screen, but influences the way successive pictures are seen, and profoundly affects the information taken away from them and from previous pictures. We try to transmit the same information to all observers, to work at the " real " end of the continuum rather than at the " fantasy " end. Now it is worth noting that a certain image could be at one end of the continuum for some kinds of people and at the opposite end for others. Radiographs (Figure 5) for radiologists would be near the real end, for however sharply they disagree over their interpretations, they differ only within a limited range and they can check the information they get from the pictures by other tests. But for people who do not understand them, radiographs can evoke as wide a range of interpretations as inkblots, and as they cannot check their interpretations they remain fantastical.

We have seen how we achieve reliability in seeing real things by continually testing and modifying our assumptions. In the same way, in learning how to present information reliably we must continually test whether our recipients are getting the information we want them to get. We want to pass the information on unconfused by wrong interpretations. We can only do this to

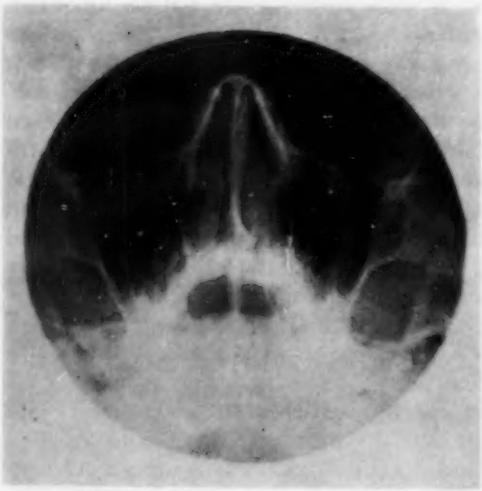

Figure 5. Radiograph of part of human head, taken through the chin and nape of neck. The shadows of the teeth and the bones of the nose can be seen, as it were, from below.

the extent that we understand the relevant experience of the recipient. We must keep in mind that a visual pattern as meaningful as a radiograph to a radiologist is as meaningless and as meaningful as an inkblot to the rest of us.

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[1] Birkelo, C. C., *et al.*, 1947. Tuberculosis case finding. *J. Amer. Med. Assoc.*, 133, p. 359. See also "Observer Error," *Lancet*, Jan. 9, 1954, p. 87.

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EVALUATING VISUAL MATERIALS

By ANDIE L. KNUTSON, Ph.D., F.A.P.H.A.
Chief, Experimental and Evaluation Services Branch, Division of Public Health Education, U.S. Public Health Service

THE purposes of evaluating visual materials are twofold: to provide guidance in their preparation and use, and to provide valid estimates of their effectiveness in achieving their specific objectives.

The principles of evaluation for these two purposes apply to any type of visual material. The techniques must be adapted to accord with the type of material being produced and the conditions under which it will be used.

Evaluation for the purpose of guidance

A variety of tests can be applied during the planning, production, and use of visual materials to identify possible weaknesses before great expenditures have been made. Necessary improvements can then be made quickly and at a minimum cost. This positive approach includes two steps:

(*a*) A critical review of the planning process, and

(*b*) Objective tests in terms of minimum requirements for success.[8 9 10]

The Critical Review

A systematic review of the planning helps to improve the quality of the product. Such a review may be focused in terms of several broad questions.

1. *Has the need that the material is intended to serve been identified by adequate exploratory fact-finding?*

Materials can have little possibility of success unless the person who prepares them has some understanding of the interests, wants, and habits of the persons for whom they are intended.

Satisfactory data on the interests or concerns of the intended audience are seldom available to the producer of materials. Partial data are sometimes available, and local people may help in answering questions like the following about persons for whom the material is intended: What do they need? What do they

want? How do they hope and plan to get it? How does the subject matter concern them? If action is recommended, how does it tie in with their habits and customs?

2. *Has the objective of the visual material to be prepared been agreed upon, clearly formulated, and written down?*

A useful way of specifying the purpose of any visual aid is to state the action or practice one hopes to achieve. For example, it is more specific to say: "The purpose of this pamphlet is to teach children to brush their teeth", than it is to say, "This is a pamphlet about brushing teeth". Once the action is specified, it is possible to list the information or attitudes that need to be acquired in order to perform the new practice. This analysis helps to determine the information that must be highlighted and to call attention to information that does not contribute and should be omitted.

3. *Is the subject matter accurate, adequate, and impartial, and will it be accepted by those responsible for supporting and carrying out the programme?*

Funds are sometimes wasted in building, packing, and setting up exhibits that are later found to be unacceptable. Posters and pamphlets have gone unused because the potential user has found them unsuitable for his place of business. Errors of this kind can easily be avoided.

It is common practice to obtain general comments from consultants selected from the group who will distribute or use the visual aid. Vague comments can be kept at a minimum by asking these consultants to advise on each illustration of a slide film, or each section of a pamphlet. As far as possible, reactions should be obtained in specific terms, such as accuracy and adequacy of the data or information, impartiality of presentation, and whether it is easy to understand and accept. Asking the consultants to indicate errors observed and to suggest the changes required will encourage useful criticism and cut down misunderstandings when revisions are made.

Objective Pre-tests

Pre-tests should be focused to obtain the reactions of individuals like those for whom the visual material is being made. It is a means of obtaining their interpretations of the message so that changes can be made in the material to take into account their patterns of thinking and ways of life.

Many techniques can be used to pre-test visual materials while they are still in the early stages of production. Among the methods most frequently used are comparisons with some known standard or guide, planned observations, questionnaires or tests, and interviews. Some of the techniques are very simple to use. Few, if any, require the services of a research specialist.

Pre-tests of visual materials should be planned to yield information about potential barriers to effective communications. Once the barriers are identified, steps can be taken to remove them. Several broad areas on which to focus a pre-test are:

1. Will the materials reach the individuals for whom they are intended ? If they do, will they attract attention and hold it long enough to be read ? An exhibit, or poster, or film, cannot be effective unless people stop long enough to view it and are interested enough to be reached psychologically.

2. Do the words, concepts, and illustrations have the same meaning for the audience as they do for the producer ? Is the purpose clear ? The primary purpose must be correctly interpreted or materials cannot be expected to influence behaviour.

3. Do the people find in the information something to satisfy their wants ? Each individual brings to any situation he faces a unique pattern of wants and values which cause him to select certain things to see and hear, to remember and act upon. It has been aptly said, " We see what we know ".

4. Is the action recommended in accord with the way the individuals in the intended audience usually behave ? If not, efforts to carry out the action could lead to conflicts in personality or social behaviour.

Producers usually check materials against known standards or professional judgement for such things as size of print, adequate contrast of light and dark, size of type, spacing, style of type, etc. This same procedure can be extended to include known information about age, sex, intelligence, education, cultural background, social status, and physical handicaps.

Tests for readability or levels of reading ease serve as another standard in those countries where such tests have been developed.[1 2 4 5 14] These tests can be applied to test rough copy before publication. They will give some indication of whether words used are within the educational level of the intended audience. When such tests are available, they are easy to learn and apply. Where they are not available, there may be lists of familiar words or some known standard for length of sentence that can be applied.

The simple objective test of having members of the intended audience read a poster, pamphlet, or exhibit sometimes discloses weaknesses in the communication that are not identified in other ways. For example, the producer may be unaware that one of the special problems of diabetics is impairment of vision.

If an exhibit or poster is to be widely used, it should be tested in a situation similar to that in which it will be used. An observer some distance away, with a stop watch, can obtain data valuable for making improvements.[3] Answers can be obtained to such questions as: What proportion of the visitors stop ? How

long do they stop ? How does this time compare with the time it takes to go over the picture or poster completely ? What seems to attract their attention ? What seems to hold their interest ? What parts do they seem to ignore ? What comments do they make ? Or the visitors may be actually asked these questions.

A more direct test can be made by showing the rough material to members of the intended audience and asking them questions about its meaning. In one instance we obtained the reactions of members of a local health department to a pictorial map used in a training manual for professional persons. We asked them, " How would you interpret this map ? " A different interpretation was given by each of the seven professional persons interviewed. Not one gave the correct interpretation. Several sources of confusion were identified.

Questions like these also help to reveal weaknesses: Is the subject one that interests and concerns you ? Is it one you want to do something about ? Do you feel you can do something about it ? Is the solution suggested reasonable and acceptable ?

In a study of the exhibits used at meetings of the American Public Health Association over a period of several years, observers were asked, " Do you believe that most APHA members would gain something of personal interest and value from the exhibit ? " They were also asked to indicate whether the exhibit provided an opportunity to act in satisfying a personal purpose in some way. Previous exhibit studies have indicated that these two factors were of great importance in determining an exhibit's effectiveness. Conclusions after several years' study suggested, " The weakest link . . . has been the failure of many exhibits to satisfy the purposes and interests of the observers or to provide them with an opportunity to act in some way to satisfy a purpose."[6 11]

One way to pre-test instructions given in visual material is to carry them out yourself, exactly as stated, assuming you know no more about the problem than is presented. Are all steps included ? Are they stated in the way that you would perform them ? Is all essential information included ? Is there any redundant information ?

New insights can also be obtained by asking someone who has seen the aid in rough form: If you were going to do the things the poster suggests, how would you go about it ? What are some of the things that might interfere ?

What is presented should help individuals to achieve the goal with a minimum disruption of their ways of life. It is unreasonable to expect new practices to be readily accepted if they conflict with deep-rooted habit patterns.

Through a critical review of the planning process and the use of pre-testing techniques, a producer of visual aids can identify

possible weaknesses and initiate improvements as the materials are being developed and before large funds are expended.

Evaluation of Achievement

To evaluate the effectiveness of visual materials it is necessary to obtain evidence on whether or not the materials serve their intended purpose. Such evidence cannot be obtained until after the material is in use. The standards, however, should be set up while the visual material itself is being planned. This will assure that the evaluation yields evidence relative to the achievement of planned objectives, and that the objectives themselves are precise enough to permit measurement. Baseline data should be obtained before using the aid so that progress toward objective can later be measured.

Valid evidence of the effectiveness of visual materials is often difficult to obtain because the visual aid is planned as part of an information or education programme including other methods. The programme objectives may be broad and difficult to achieve ; positive effects may not be expected for years.

When the purpose of the visual material is specifically defined, whether it is to teach a skill, impart information, influence attitudes, or improve practices, some measurement of effect can usually be obtained. A common practice is to withhold use of the materials from part of the audience for the purpose of making comparisons. When this approach is used, care should be taken to have the groups matched on those characteristics that are likely to influence the results. The ones usually considered are age, sex, income, class, etc., although frequently other factors may be more critical. While random matching is preferred, it is often difficult to use in an operating programme.

In evaluating the effectiveness of a filmstrip on the use of non-fat dry milk, the film was set up in the waiting-room of a maternal and child welfare clinic. Alternate women coming to the clinic were routed to this waiting-room and to another available. Tests given afterwards revealed that the group seeing the film made significant gains in information. Later this filmstrip was used as part of a clinic programme to encourage the use of non-fat dry milk. In this instance, all mothers coming to the clinic during a single day, except those that did not need the product, were tested in a follow-up home visit two months later. While they made significant gains in knowledge, none of them had started to use the product. Thus the filmstrip was effective in imparting the specific information for which it was planned, but the clinic programme designed to encourage the use of non-fat dry milk was ineffective. Follow-up interviews indicated that the basic problem was one of motivation, rather than information, and suggested new approaches to take.[12 13]

There are many variations in methods of evaluation. At times, as in the above instance, interviews are appropriate. At other times, observations, questionnaires, or statistical data may yield essential evidence. In evaluating a Service periodical, for example, a brief notice was included advising recipients that the periodical was being evaluated and asking them to send in a post card if they wanted to be continued on the mailing list. In this instance less than ten per cent of those on the list sent in a request that the service be continued. This suggested that the publication was not serving a useful purpose and it was discontinued.

A similar approach was used with another publication and resulted in requests being received from about two-thirds of the subscribers. The majority of these subscribers mentioned specific contributions the publication had made or specific ways in which they had used material.

In measuring the effectiveness of a visual aid, it is important that the criteria used be valid. The number of visual aids produced, distributed, or used are not adequate measures. They may be evidence of the intensity with which personnel have worked but they do not indicate what people have learned. Nor are data on the number of people who see the aid, their expressions of interest, and evidence that they understand concepts and purpose, valid evidence of effectiveness. Such data should be obtained during production, so that improvements can be made and the likelihood of effectiveness increased. However, they are not valid evidence that improvements in learning and behaviour occur when the material is used as intended.

It is neither feasible nor practical to measure the effectiveness of every piece of visual material produced. Yet data on effectiveness is needed for many purposes—to improve efforts, to support budgets, to defend programmes, and to improve the morale and professional growth of personnel. Through evaluative studies. also, unknown aspects of success or failure can be identified.

Allocation of a portion of each budget to the support of thorough evaluation of part of the programme is a sound policy. Meanwhile, through pre-testing, we can apply the information available.

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SUMMER SCHOOL

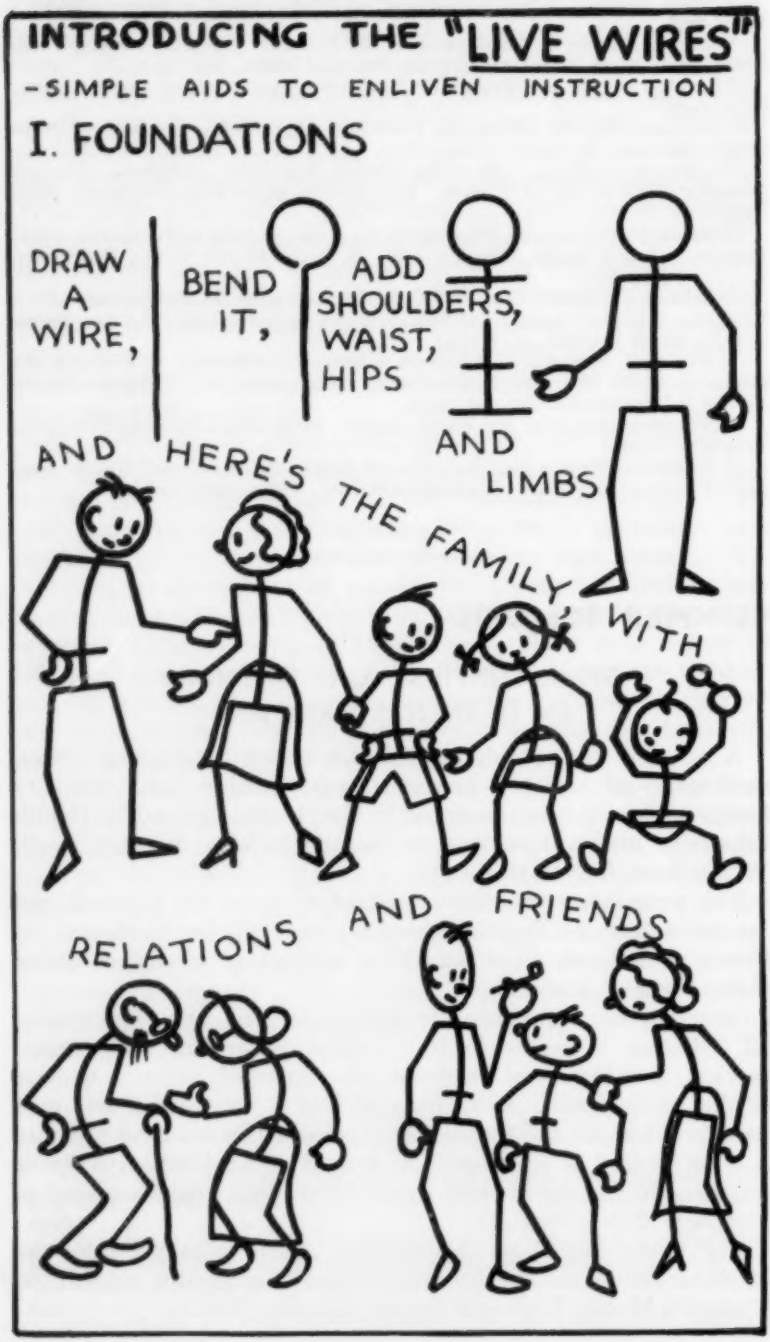
OPPORTUNITIES AND METHODS IN HEALTH EDUCATION

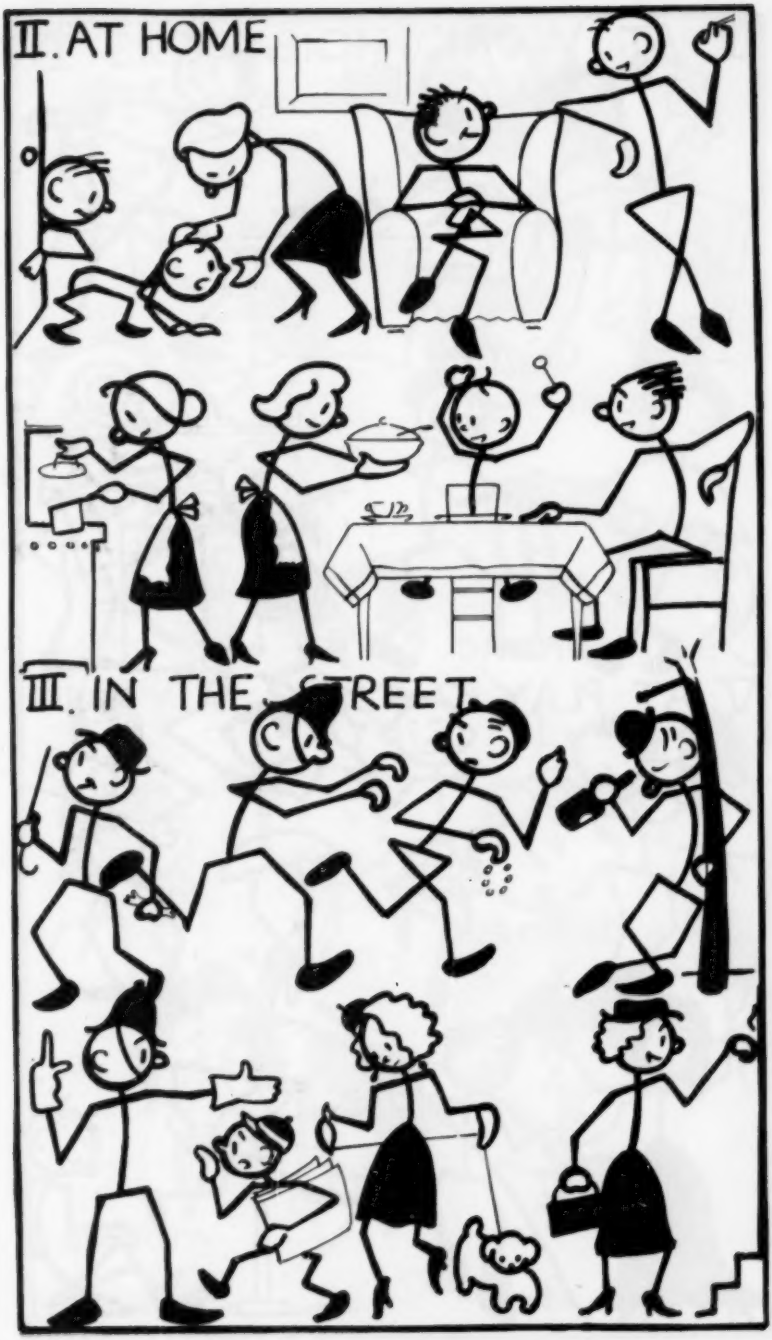
A valuable and stimulating refresher course for doctors, nurses, environmental sanitary personnel, educationists, and auxiliary health workers is being arranged by the Central Council for Health Education and will be held at Neuadd Reichel, Bangor, North Wales, from August 16 to 26.

The programme has been designed to cover the physical and mental aspects of Health Education and will be conducted by means of lectures, demonstrations, and group discussion under skilled tutorial leadership.

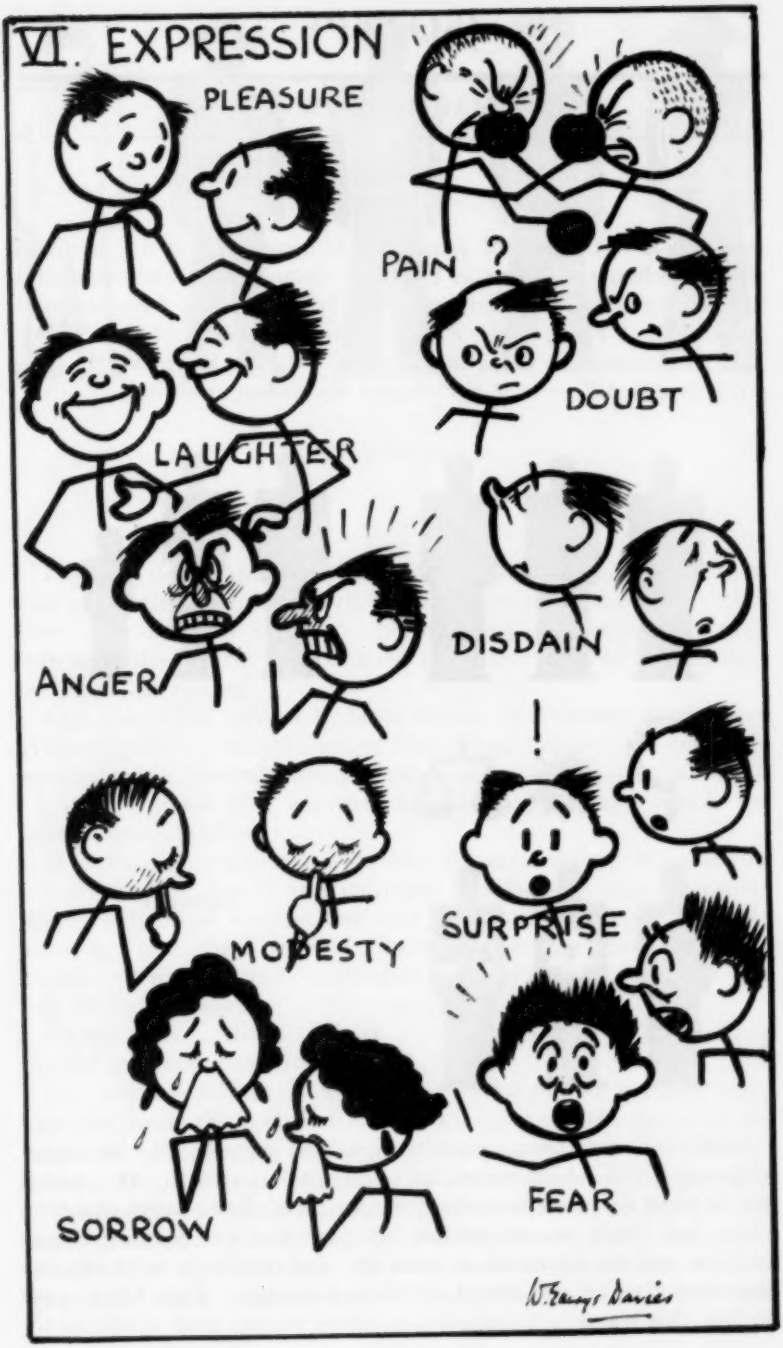
In past years approximately one hundred students representing all branches of public health, welfare, education, the hospital services, and industrial medicine have attended, about a quarter of the participants coming from abroad. The School has thus become a unique and international occasion for bringing together a wide variety of experience in a field of work which is being increasingly recognised throughout the world as the spearhead of The New Public Health.

Full particulars about this meeting can be obtained from the Medical Director, The Central Council for Health Education, Tavistock House, Tavistock Square, London, W.C.1.


INTRODUCING THE "LIVE WIRES"
-SIMPLE AIDS TO ENLIVEN INSTRUCTION
I. FOUNDATIONS
DRAW A WIRE,
BEND IT,
ADD SHOULDERS, WAIST, HIPS
AND LIMBS
AND HERE'S THE FAMILY WITH
RELATIONS
AND FRIENDS


II. AT HOME
III. IN THE STREET

IV. AT WORK
V. AT PLAY


VI. EXPRESSION
PLEASURE
PAIN
?
DOUBT
LAUGHTER
ANGER
DISDAIN
!
SURPRISE
MODESTY
SORROW
FEAR
W. Langs Davies

ISOTYPE

By MARIE NEURATH

ISOTYPE is the name of a picture language; it is an artificial word, made up of letters as UNO is—though it is made to sound like a proper word based on Greek roots. As an *I*nternational *S*ystem *O*f *TY*pographic *P*icture *E*ducation it uses the SAME TYPE whenever a language could use the same word; two symbols are different if they stand for different things.

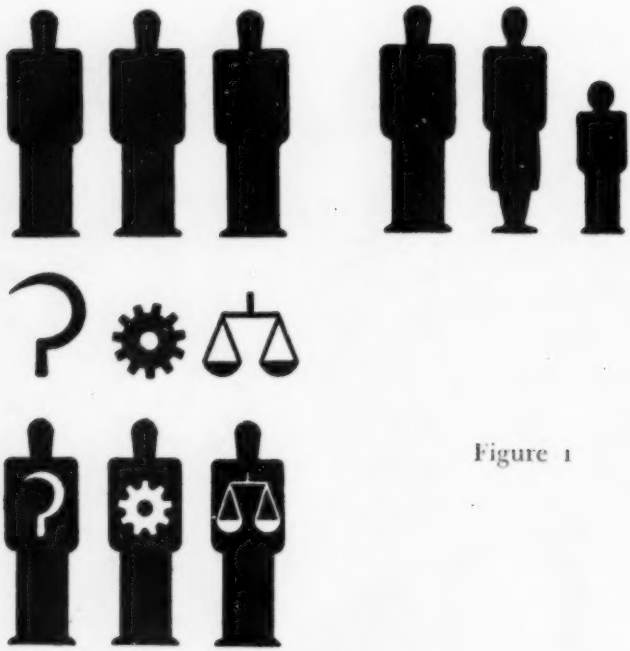


Figure 1

Sometimes men have to be distinguished according to the main subgroups into which mankind is considered to fall. If colours can be used for the chart the different men can be symbolised as white, red, black, brown, yellow; if only black can be used, black outlines and shades of black must do, and the shape of the head-gear may give an additional distinctive feature. Pure black may do too, this way:

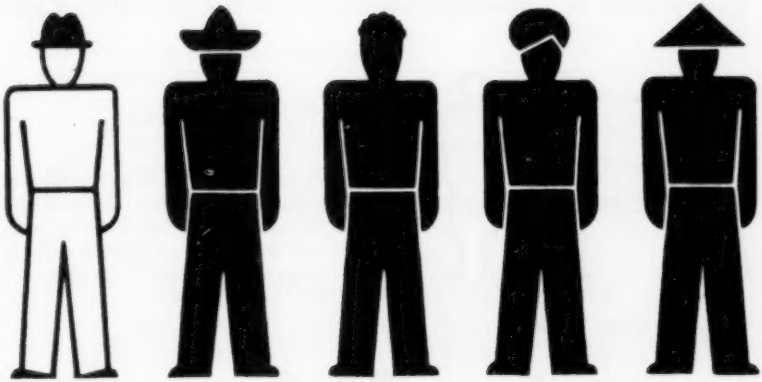


Figure 2

Figure 3 is a simple story told in Isotype ; it deals with a man and a married couple and their children ; their shading symbolises their state of health : whether they are healthy (white), infected (black screen), or diseased and infecting (black, with dots for germs spreading).

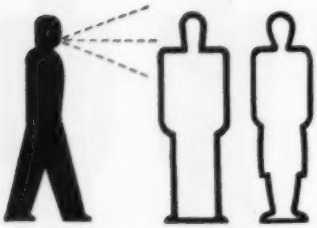
Our chart has obviously been drawn of Western man for a Western public ; adaptations to local requirements will certainly sometimes be needed, and perhaps one of the man symbols of Figure 2 can be used together with corresponding symbols for women and children.

If you have to tell such a story to a group of listeners and you can use a blackboard and coloured chalks, very much simpler shapes will do so long as you and your audience agree on their meaning, and three colours can stand for the three states of health. Whatever your symbolism is—the rules you follow can still be those suggested in the Isotype chart.

Figure 4 is a simple visual argument why a diseased lung should rest, and how that can be done.

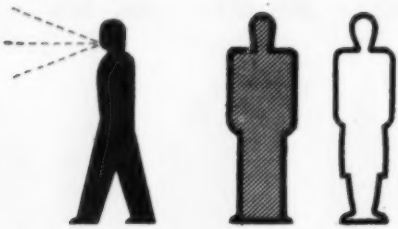
On a more advanced level one may want to explain what happens inside the body, what damage is done by the germs to the lungs, etc. By isotypes one can tell the story without any difficult terms. The drawing of a lung is not an artist's work exclusively ; first one has to find out about lungs, then it has to be decided what is relevant for our story and possible later stories ; only then can the artist start his work. In our case it was important to show that each lung is contained in a "bag" which can be filled with air so that a lung can be made to collapse (Figure 5).

Every Case of Tuberculosis Comes From Another Case



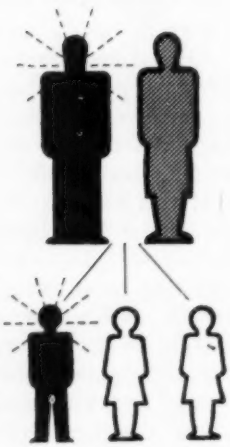
A relative or boarder who has tuberculosis comes to live in the household of this healthy man and wife. One or both are likely to get the disease from him.

One year later.



The boarder leaves the household. The husband has been infected. He shows no signs of sickness.

Ten years later.

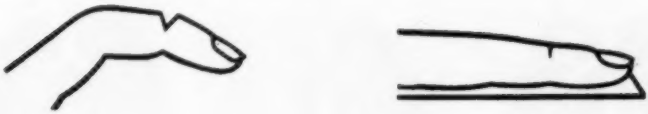


Tuberculosis has spread in the family. The husband is sick with tuberculosis. The wife is infected but not sick. The oldest child also has tuberculosis. The second child is in perfect health. The youngest (with black spot) shows an infection which has healed.

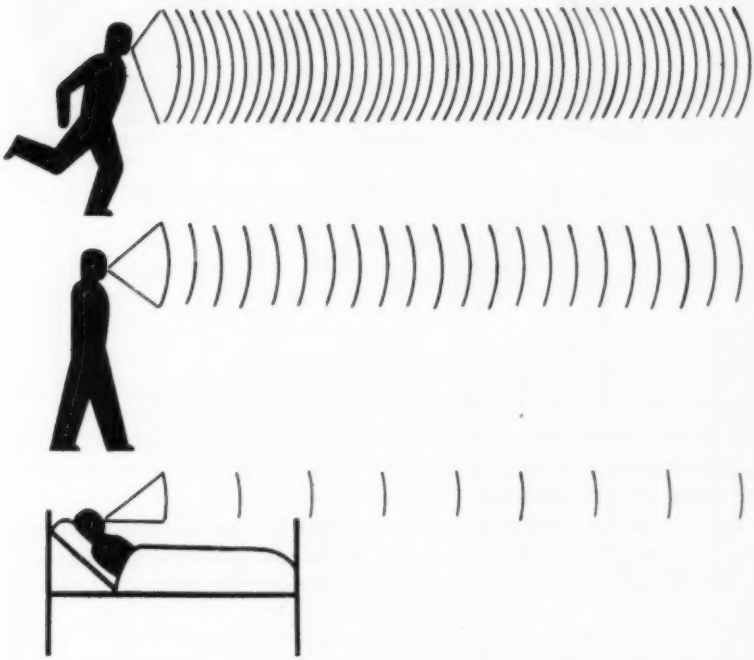
Figure 3

Why Rest the Lung . . . and How

Any injured part of the body heals only if put at rest.



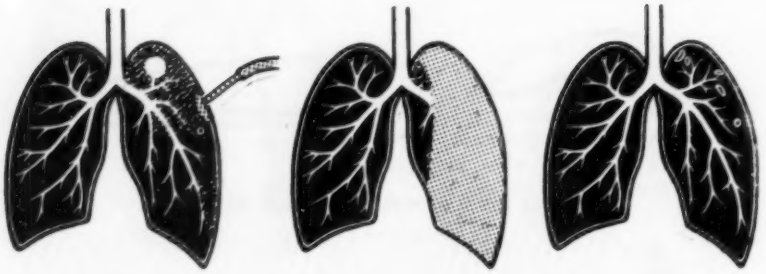
Vigorous exercise makes the lungs work hard.



Rest in bed is the treatment for tuberculosis because body rest eases the work of the lung and gives it a chance to heal.

Figure 4

How Lung Rest Can Heal



The chest wall is painlessly pierced by a hollow needle.

Air is let in and the lung collapses like a sponge.

When the lung is healed it is allowed to blow up again. Only the scars remain.

Figure 5

Health, disease, cause of death have a social aspect, and we have a chart (Figure 6) which brings this home.

There is no change in visual language ; statistical comparisons, organisational schemes, technical sequences, all can be made with the same sort of symbols.

Isotype work started 30 years ago, not for an illiterate public, but for such persons who miss part of essential knowledge because they have a certain fear of a table of figures like this:

Annual Marriages in Germany

1911	512,819	1917	308,446	1923	581,277
1912	523,491	1918	352,543	1924	440,039
1913	513,283	1919	844,339	1925	482,792
1914	460,608	1920	894,978	1926	483,198
1915	278,208	1921	731,157		
1916	279,076	1922	681,891		

They will never notice that such tables contain striking facts of general interest ; a graph is a help ; an Isotype chart is easier still (Figure 7).

Poverty Breeds Tuberculosis

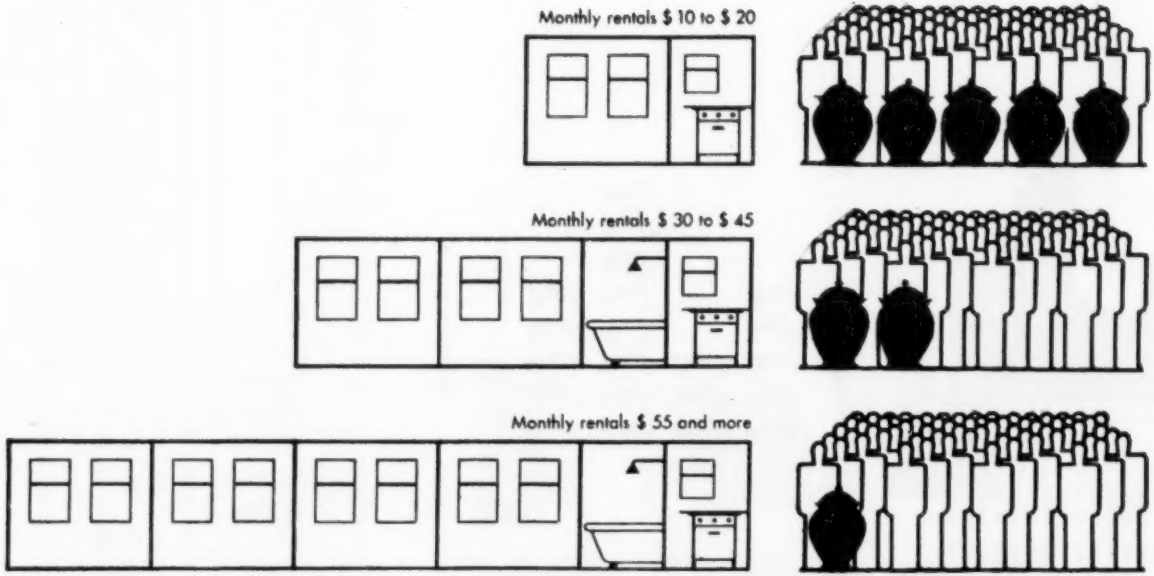
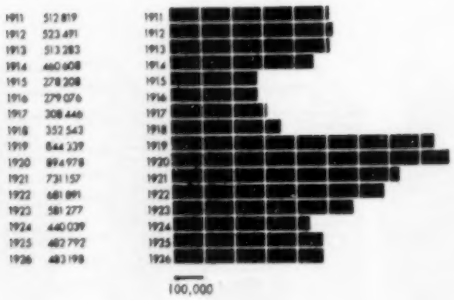

Monthly rentals $ 10 to $ 20
Monthly rentals $ 30 to $ 45
Monthly rentals $ 55 and more
Each urn: 25 deaths per 100,000 white population.

Figure 6

Tuberculosis may attack anybody, but it is most common among the poor. Poverty itself does not cause tuberculosis (only the tuberculosis germ can do that), but poor housing, crowding and careless living make it easier for the disease to spread from person to person. Hunger, worry, overwork, make it easier for the disease to develop once it has attacked.

Annual Marriages in Germany



Annual Marriages in Germany

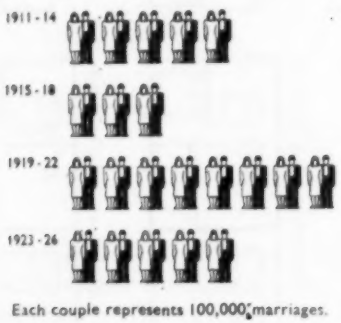


Figure 7

If you work out how one gets from the table to the graph and from the graph to the Isotype chart, you will see what the visual teacher's job has been, what he has considered as essential and what as detail which can be sacrificed in the process of simplification.

The essential fact brought out in this chart may be summarised in a sentence like this: During a war many men of marrying age are away and prevented from marrying ; after the war they will do so ; this makes for fewer marriages during the war and for more after. Still, I believe from the educational point of view it matters how such a fact is presented ; the chart gives a chance to find this out. This is a way of learning in which the learner has to take an active part.

Statistics are an important way of describing social facts. In a time of growing social responsibilities there is a growing demand for social information, and visual ways become very

important. Many such methods have been in use side by side, and Isotype was worked out as a uniform method of universal application. In the early pioneering days charts were designed to compare the merits of different methods and to show that the Isotype method, with the repetition of symbols in appropriate arrangements, combines all merits without losing any.

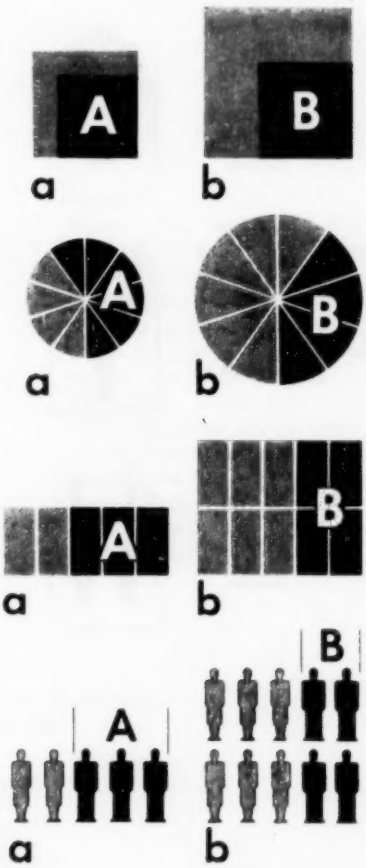


Figure 8

If you ask yourself the following questions:

1. Which is the correct arrangement, in order of size, of the areas a, b, A, B, a–A, b–B ?

2. Which are the exact proportions of the sizes of these areas ?

you will find that squares and pie charts cannot answer them all, but that the Isotype arrangements, either with abstract or pictorial units, can.

One very striking example which shows the advantage of the repetition of units is the representation of density:

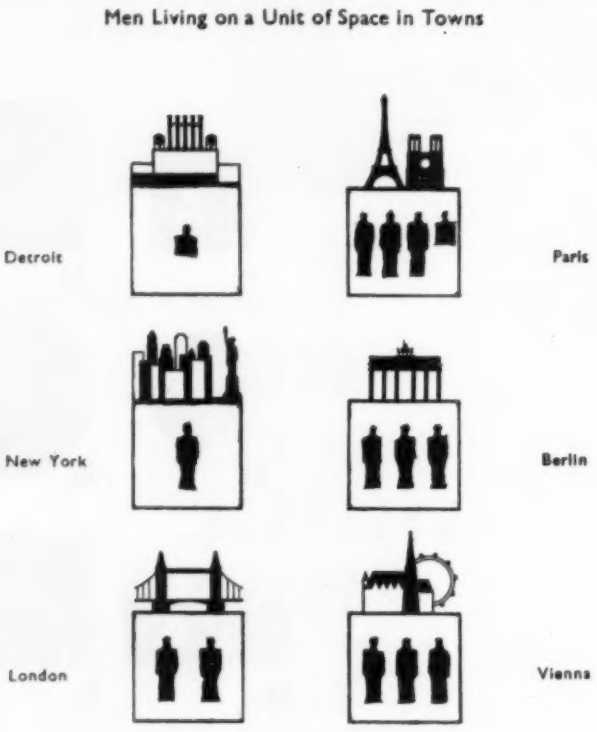


Figure 9

It is simple and obviously appropriate.

Comparison is vital in visual teaching. Even in biological representation such comparisons should be made; by giving more than one stage one notices where changes happen and what the story is. With not-moving pictures, there is no other way to show a development.

Words are more flexible but less impressive and more easily forgotten; in a lifetime of learning there are many more words

Parents and Young

When a bee enters the first snapdragon, pollen from the stamen (the male part of the flower) sticks to its back. When it visits another snapdragon, pollen clings to the stigma (the female part) and begins to germinate. Tubes grow from the pollen grains into the ovary, or seed-vessel, of the flower. They make contact with the unripe seeds called ovules. The ovules then become ripe seeds from which flowers can grow.

Figure 10

than pictures; this is one of the reasons why we think that visual teaching is a responsible task and should be taken seriously. The first step in making a chart is finding out about the subject much more than a chart could show; only then can we know what the essentials are. Also we have to understand matters in such a way that we can reproduce them in an entirely new medium. We believe that good charts can only be made by a team in which research worker and teacher co-operate with the artist and together build up a tradition of approach and design.

It is the task of the research worker to provide the right information, but also to see that this is properly represented in the finished chart; it is the task of the visual teacher to find a way to represent this information in visual terms clearly and in the tradition of our visual language; the artist has to give the rough ideas a finished shape in the style of former charts, design new symbols and arrange them attractively. Isotype charts should give correct information in a stimulating, clear and pleasant way.

ACKNOWLEDGEMENTS.

Figures 3, 4, 5 and 6 are adapted from charts which were produced in Isotype for and in co-operation with the National Tuberculosis Association in New York; Figures 7, 8 and 9 are reproduced from Otto Neurath's *International Picture Language* (in Basic English, The Orthological Institute, Kegan Paul, London, 1936), with Mr. C. K. Ogden's kind permission. Figure 10 is from the Isotype series *Visual Science* (Max Parrish, London, 1951), Vol. IV.

PROPAGANDA POSTERS

By KENNETH BIRD (Fougasse), C.B.E., B.Sc., A.M.I.C.E.

The word "propaganda" is here used in its less ominous sense, and the word "poster" is used to cover anything stuck up on a wall with the object of persuading the passer-by; for the purposes of this article, therefore, "propaganda-poster" covers everything stuck up with the object of persuading the passer-by for the common good—of persuading him to lend all his money to the State, for instance, or to keep to the left in the subway.

(Further, it may be taken as including all its smaller relations, the booklet- and leaflet-covers, whose simple object is to persuade the beholder to turn over the page and to read what's inside.)

In order to succeed in its aim, the propaganda-poster has three main obstacles to overcome: firstly, a general aversion to reading any notice of any sort; secondly, a general disinclination to believe that any notice, even if read, can possibly be addressed to oneself; thirdly, a general unwillingness, even so, to remember the message long enough to do anything about it.

In consequence, the propaganda-poster has obviously three main functions to fulfil:

(*a*) It must attract the attention of the passer-by;
(*b*) It must then persuade him; and
(*c*) It must keep him persuaded long enough to take action on it.

These three functions, (*a*), (*b*) and (*c*), differ widely from one another, and often demand entirely separate and distinct qualities; at the same time it is evident that (*a*) is not much use without (*b*), and (*b*) is not much use without (*c*), while (*b*) and (*c*) are obviously no use at all without (*a*).

Let us therefore deal briefly with each of the three functions in turn.

To Attract the Passer-by

To attract the attention of the passer-by, naturally the first requisite is that the poster should stand out from its surroundings—if it appears merely as a part of the familiar fruit salad of advertisements covering the walls of our stations, etc., it will inevitably waste whatever sweetness it may possess. (Too often.

of course, posters seem to have been judged in the quiet and comfortable concentration of the sponsors' office—and if every poster-producing authority possessed a special testing-room, where the new designs could be tried out under natural conditions, with gaudy competitors all round them and every form of distraction laid on, the standard might improve.)

The first suggestion, then, is that *the design should be such as to isolate it from its surroundings: it should always be well barricaded in all round.*

Secondly, and still with the object of attracting—and intriguing—the attention of the passer-by, the general visual message should be a judicious mixture of the obvious and the unobvious; say, generally, 90 per cent of the former and 10 per cent of the latter. In other words, the passer-by should always be able to see at a glance what it is about, but not *all* it is about; nine-tenths should catch his eye, and the remaining one-tenth should arouse his curiosity, so that not only is his primary attention caught, and held, but his secondary attention is called into play, too.

The second suggestion, therefore, is that *nine-tenths of the poster should be sufficiently obvious—and interesting—at a distance (both physical and mental) to induce the passer-by to approach near enough both physically and mentally to discover the remaining one-tenth.*

And that, so far as generalities go, more or less "takes care" of (*a*), save for a minor recommendation that, before issuing a poster, it is just as well to examine it to see how easily it can be defaced by small boys of any age from 5 to 50. (A very slight addition with an irreverent pencil is often sufficient to play havoc with the most inspired design.)

To Inform and Persuade the Passer-by

Turning now to (*b*) (that is to say, the persuasion of the passer-by once his attention has been caught):

Compared to the general question of attention-attracting, this is a complex and specialised problem in which each case must be dealt with more or less on its merits, but probably the first suggestion to the would-be persuader should be the same in every case, namely—*never attempt too much.*

A poster cannot *prove* anything: it cannot *prove* to you that the safety of the State demands all your own individual savings, and it cannot even prove to you that you ought to keep to the left: the most that it can do comfortably and without strain is to bring to your notice the desirability of a certain course of action, and in many cases the most it can do is to get you to consider the matter. If it attempts to do more, if it tries to prove too much, or to protest too much, it will automatically defeat its own object (quite apart from the fatal over-complication probably involved).

Eileen Soper

Fougasse

Two posters issued by the Central Council for Health Education

And this leads to the second suggestion under heading (*b*), which is on similar lines to the second suggestion under heading (*a*), namely, that the persuading "argument", like the primary message, should be a judicious mixture of the obvious and the unobvious. The argument of the poster should aim at taking the passer-by (who has now ceased to be "the passer-by" and has become "the reader") nine-tenths of the way, leaving the final steps to be inferred: in short, the second suggestion is that *the reader should be allowed to reach the final conclusion by himself.*

This type of approach will very often avoid that stubborn resistance-to-persuasion that over-conclusive moral lessons usually evoke. Moreover, the reader is much more likely to absorb and retain a lesson that he has had a hand in himself: present him with a *reductio ad absurdum,* for instance, in which the final steps are left for him to discover for himself in a flash of self-illumination, and he will become a party to his own persuasion.

To Hold the Passer-by

We now arrive at (*c*) (how to keep the reader persuaded long enough to take the necessary action):

The first requisite in any attempt to induce the reader to carry an idea away with him is clearly that he should not be given too much to carry away: that is to say, the idea of the poster *must be* in simple terms. (It is obvious, in any case, that unless the idea is one that the reader can describe to himself in a few words, he is hardly likely to keep it in his memory for long, even if he wants to.)

For the same reason it is equally important that there should be only *one* idea, too. This may sound easy and self-evident, but it is, in point of fact, strangely difficult to bring about: to ensure that the poster conveys no more than one idea to the reader, and that one a palatable and appealing idea, is no mean task—and there is always the temptation to add unnecessary material in an endeavour to make the affair more amusing or attractive or noticeable.

The addition that is made may well be successful in this and still be out of place: it may, in fact, help quite a lot with (*a*), and even with (*b*), but at the same time remove any chance of surmounting (*c*), which is, of course, the object of the whole affair.

Thus, the first suggestion under heading (*c*) is that *the idea of the poster should be as simple as possible—and never more than one.*

The second suggestion under this heading is again on similar lines to the second suggestions under (*a*) and (*b*), both of which recommend that the reader should be made to do some of the work himself. In this case it is in the actual treatment that the reader's collaboration is suggested—and the suggestion is that,

Abram Games

Ashley

Ashley

William Little

The famous "Black Widow" poster that caused so much comment that questions were asked in the House of Commons about it.

By courtesy of *World's Press News*

whatever the treatment employed, *something should always be left for the reader to "fill in" for himself.*

This undoubtedly assists him to carry the picture away in his memory, and in flattering his imagination, it flatters itself: in support of the suggestion, one might quote the fact that readers, describing a favourite drawing, will frequently indulge in superlatives over, say, the superb expression on a certain face, when in actual fact that expression really consisted merely of one dash and a dot. It is not, of course, the drawing that they remember with pleasure, but their own "fill-in".

This provides one of the arguments in favour of the employment of so-called formula-figures—that is, of figures that do not bear any naturalistic resemblance to real people: the features of such formula-figures are easily idealised in the memory and moulded to the reader's own satisfaction; they do not, like naturalistic features, remain obstinately defined and "factual".

Another argument, incidentally, in the same direction is the fact that although a figure drawn with what we loosely describe as photographic accuracy may certainly seem to be "true-to-life" and to "look like a real person", actually it can only truly look like *one* real person, and that one probably not at all like the reader whom it is trying to convince!

If, on the other hand, the figure is drawn in a "formula" style, it is quite evidently a symbol for humanity in general (or some section of it): it can stand for "everyman", for anybody and everybody, and that naturally includes the reader himself.

The Value of Humour

That brings us to the subject of humour and its employment in propaganda: and, since propaganda usually treats of affairs of deadly seriousness, the advisability of seeming to treat such matters lightly might be called in question.

Actually, of course, humour has nothing whatever to do with being funny at the wrong moment, or on a subject that should not be jested about: such is, in fact, the opposite of humour. The function of humour is essentially corrective: it is a corrective, for instance, of incongruity and of faulty proportion—so that it is just as much a corrective of unseemly levity or flippancy as it is of unseemly solemnity. In any case, the province of humour must be to help us more in foul weather than in fair; were it only to function among things of small importance we should be in a very bad way.

What, then, is the difference between "humorous" propaganda and "realistic" propaganda? As I see it, the function of realistic propaganda is to stop you putting your hand in a circular saw by showing you just what happens when you do so: the function of humorous propaganda, on the other hand, is to correct, by

Hans Schleger

Lewitt Him

T. Eckersley

(By courtesy of *World's Press News*)

implication, the state of mind that prompts you to put your hand there at all.

Realism states a fact, "If you *do* this, it leads to that": humour, with its naturally wider net, says "If you *behave* like this, it leads to that."

Where the realistic necessarily means the horrific, as it very often does, the advantage of humour is considerable—for anything unpleasant naturally causes an automatic closing of the mind against it, since minds, like eyes, are provided with long protective eyelashes. You may possibly, and inadvertently, be tricked into looking at a horror-poster once, but you will stop doing so as soon as you recognise it for what it is: horror shuts your mind in self-defence, and the more efficient the horror-content the tighter and quicker it shuts it.

Humour, on the other hand, aims at opening your mind, and the better the quality of the humour the wider it opens it.

Horror's lesson is a single distasteful shock—it may admittedly have a startling primary effect on the reader, and this primary effect may be twice or even ten times as great as that of humour: all the same, the latter has, I am sure, a thousand times as many chances of getting past (*a*), and through to (*b*) and (*c*)—that is to say, of *persuading the reader, and keeping him persuaded.*

One final argument, and a very simple common-sense one, in favour of the humorous approach:

The propaganda-poster has to get its message across to as many people as it can; however good it is, it can't do much if it isn't seen. It has therefore got to be displayed as widely as possible.

Now, in a totalitarian state this is presumably easy—a "directive" is issued that the poster is to be displayed everywhere, and displayed it is: in comparatively free democracies, however, this is neither practicable nor desirable.

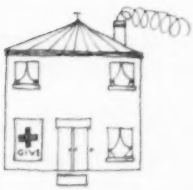
For wide distribution and display, therefore, the success of a propaganda-poster is dependent on the good will of people in general—on the readiness, for instance, of factory managers, hotel managers, shopkeepers, etc., to stick it up in their establishments.

Now it is obviously not wise to ask the owners of teashops, restaurants or public-houses to put up horror-propaganda for their clients' comfort, nor is it much use to ask shopkeepers to entertain their customers with gruesome pictorial warnings—if given the choice between realistic and humorous, they will naturally almost invariably choose the humorous, and, if given a selection of both (which is usually the case), it is the humorous that they will always actually display.

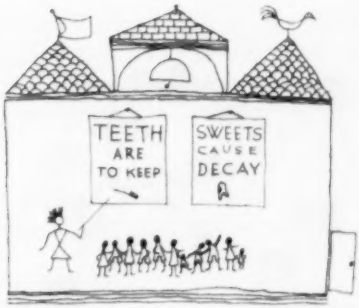
JUST POSTERS

By STANISLAO DINO RIGOLO

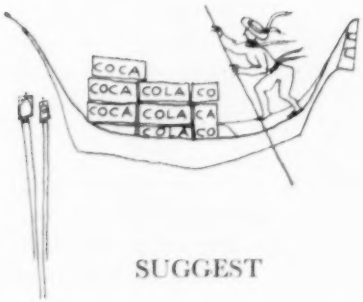
Posters are pictures which



COMMAND



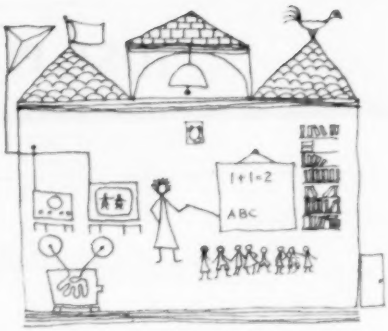
INFORM



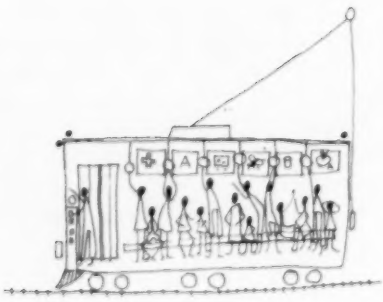
SUGGEST

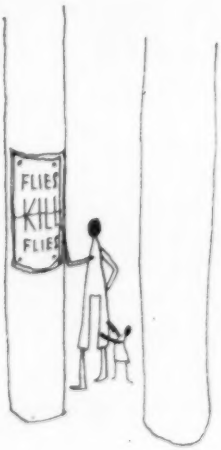
GUIDE

The poster has been favoured for many years because of its effectiveness and economy. Despite new techniques it is still one of the foremost means of communication.



Advertising has set up standards of commercial art devoted to the psychological competitive warfare of selling. All about us we find signs and posters competing for size, splash and best space—enhancing, glorifying, idealising a variety of common goods.





To begin designing the poster, the story must be contracted to its essential idea, carefully retaining all the exact information. One idea, one poster.

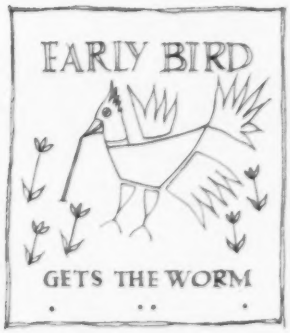
The story, then, becomes one or two words with a picture, the one supporting the other. The picture and the words of a poster actually refer to each other. They need one another, as, in the film, the visuals require the support of the spoken commentary.

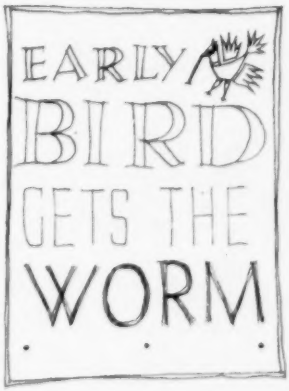
Sometimes the posters may be interpreted for the public by a third party. An example of this is the schoolteacher who explains the picture and the story to her pupils. But ordinarily the poster is out on its own. The observer interprets the idea as an individual.

The composition of the visuals, that is, the disposition of those particulars which go to make up the complete poster, play the dominant and indispensable role. These visual components must be given much consideration by the designer of the poster.

Picture Composition

A visual, simply conceived, has its picture well drawn and well placed on the paper. The composition, well made, places its visuals in an obvious line of vision on the poster. Or in such a place that directional lines within the design will attract the eye to that point. The picture in the corner, or falling behind the lettering, will be difficult to search out and to decipher with ease.





At times, the designer of a poster is carried away by "aesthetic" qualities and forgets to whom he is addressing the poster. Very often he puts aside the purpose itself for making the poster!

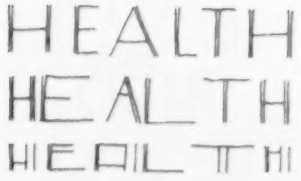
The intellectual approach may not have its effect! Restraint is necessary to remain within the limitations of the visual aid itself, and within the mechanical restrictions of the method of reproduction.

A poster is displayed without discrimination—all eyes will fall upon it. The visual, the idea, and the story is presented to the people—to all people. It is not like the cinema, where the audience chooses to go and see. There is no selection of observers to see a poster—it will be on view to all. The good poster, if it is to be acceptable to everyone, must be simple and unpretentious in concept.

Lettering

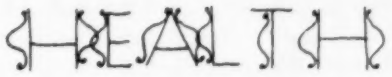
Letters may appear on a poster—usually one or two words to support the picture, or to suggest the idea and the story behind the poster.

The first merit of lettering is its legibility, rather than its size



or décor. This is an important consideration in creating a poster. Each letter must be well designed. Well-spaced, good Roman

lettering one inch high is more legible than crowded four-inch lettering of the same character from the same distance. Fancy lettering is not only illegible but, in most cases, will be in poor taste.



Words, as well as letters, must be well composed. Crowded together, words will appear confusing and undecipherable. Too far apart, words also become unintelligible.

Letters and words should be placed on the poster where they will be seen clearly and readily. They should be kept together so that there will be no danger of losing the text. For the sake of legibility, too, neither letters nor words should clash or interfere with the other information on the poster.

Words should not provide a game of hide and seek. An 'original' method of composition or layout for words is rather risky, too. Don't expect your observers to stand on their heads or to suffer a kink in the neck. They will probably avoid such discomfort, and consider the text unnecessary to be read.

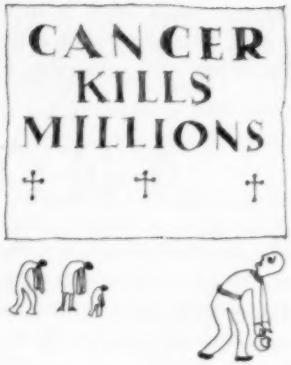
Slogan

A slogan concretely writes down in a few words the idea—directly or indirectly referring to the picture, which, combined, present the story. Because of the conciseness, these few words could become ambiguous. Care must be given that simple, direct words are used for a simple and correct interpretation by the observer.

In some cases, where the poster carries its idea largely with only a symbol, words may be kept to a minimum, or may be wholly omitted. However, this lone symbol or sign must be extremely recognisable and familiar. For example, the Red Cross is an internationally stabilised symbol, and registers immediately as an intelligible idea. In a poster bearing such a visual, the story has almost all picture support.

The Mood

Mood is the character and life given to a picture. The mood of a poster is also instrumental in giving it that quality and atmosphere which will carry the idea. If the idea of a poster is to show that happiness is an agent towards good health, then that poster should be a happy one. A happy poster is one which will put its public in a pleasurable thinking mood—creating a happy atmosphere with everyone. A poster which has a grim mood, projects its due effect.



The Size

The size of a poster is not its value. Like the poor letter, its size will not correct its drawbacks. Rather, the bigger size will enhance the flaws.

It is not the amount of space a letter or picture occupies, but the composition designed for the limited area.

Some systems of reproducing will permit a certain dimension of paper only, governed by the restrictions of the mechanics.

Designing the Poster

A poster communicates to its observer as a friend. It is not a merely didactic reminder. When making the original poster, the designer writes as a personal note to all who may see it, keeping in mind the aim or purpose of the poster.

Every technique of reproduction has its limitations, e.g., maximum or minimum size, number of colours, type of graphic work, number of reproductions possible, etc. All these points must be considered by the designer when beginning his original drawing.

Pen and pencil will give line drawings. Treating certain subjects in this manner produces very effective graphic characters. However, without some stabilising background, a poster of this technique will appear somewhat weak. With this method, flat colour areas can only be treated as shapes of textures, and do not have the same solidity as a flat, over-all colour. Pencil can produce shaded areas which may act as contrast for background or foreground. Brush and ink, of course, would make it possible to fill in a completely black background ; or conversely, a silhouette ; or combinations of solid black, and line, and textures.

Charcoal or carbon pencils produce very flexible and forceful lines, and also provide the deepest black backgrounds. Charcoal has a special character which can be most striking in its simplicity. It is an excellent medium for introducing mood, having a pliancy capable of creating dramatic and exciting effects.

Tempera or poster colour, fast-drying, flat, and easy to handle, has been perhaps the most popular method for making poster originals. The paint permits many corrections, and because of its flat tone qualities will reproduce well. However, there is a danger in using paints. Unless the designer is limited to two or three flat colours, the tendency is to imitate life-like things, introducing all the gradations in the colour scale. This may become cumbersome in the mass production—unless the reproduction budget is not too tight.

If the artist-designer is searching to translate the things around him in a true-to-life mannerism, it would be wisest to use the photographic camera. The artist had best make use of his potentialities in giving character, mood, and personality to his drawings—and have a little fun with his work!

Paper cutout also has a flat quality which permits good reproduction. The use of cutout paper to make the visuals will create the most delightful and outstanding characters. The technique lends itself particularly well to the silk screen method of reproduction.

Paper, scissors, and glue are the basic materials required. When the cutout figures are being designed, they may be assembled, reassembled, shifted about, and composed at the leisure and will of the artist—never having to erase, and yet having the advantage of alterations by a simple movement or adjustment.

Many details may be given to the design with this system of drawing the original. The cutout paper poster has a simplicity and charm, a clarity and definitiveness which makes it a unique and feasible system of composing visuals.

Photography has the advantage of recording the things as we actually see them. This mechanical means of producing visuals is extremely versatile. The photographic system can produce many most interesting and unusual effects limited in some other techniques. From a small and easily procured negative, the visual may be enlarged to any desired size with great facility.

These are some techniques or methods used in making original poster designs. Each has its own particular characteristics. None of these techniques can be considered as better than any other. Respecting the limitations and the advantages attributable to each, the poster producer armed with imagination, good will, and humour, has a maximum of possibilities at his disposal.

Colour or Black and White

The black and white poster, although it has no colour in the sense of red and blue and yellow, has, or can have, its own local "colour". It, too, can be happy or glum, distinguished or characterless. Its colour is in its design and its mood.

The poster in colour, of course, sets up its own stage—gay,

bright, cheerful. However, this colour sensation can be carried too far.

Again, a simple colour scheme of two, three or four colours is adequate to create an effective visual. Other ideas can be used to introduce attracting colours. For example, a coloured paper as background, to replace the conventional white paper, will provide an interesting solution.

Mass Production

A poster is usually employed to advertise or to propagandise. So it must be distributed widely in order to reach large numbers of people.

By a process of duplication we can make many, many copies of the original design which are then distributed or posted on the walls of houses, schools, and doctors' offices, etc.

If only small quantities are to be reproduced, linoleum or wood block might be used (up to a few hundred without becoming monotonous and time wasting), or by silk screen (up to a few thousand). With these methods of reproduction, many copies may be made, but since they are " manual " procedures, the time element will be both tedious and expensive. For greater quantities, the automatic processes of the printing machines will provide a more economical answer, saving time and effort and expense.

Posters intended to be displayed for any length of time must be reproduced on durable paper. However, thickness, weight, and size should be taken into consideration when mailing or distributing copies. Rain and sun and wind will affect the posters, fading the colours, and tearing the paper. The method of reproduction is selected keeping these points in mind, just as the artist-designer must recognise and accept its limitations in designing his original poster.

A Book of Posters

Posters may need two or three or four or more pictures to tell the story. Every good poster has but one idea. For each idea, make another picture. But if a number of pictures are required to tell a story, then the poster becomes a series of pages. Pages make a book. The story book made of posters may be so constructed that it resembles a gigantic loose-leaf note-book, and, as in a filmstrip, one picture follows another in an orderly sequence. Each picture of this poster book will have its story—and so the book may be accompanied by a brief commentary which explains the visuals. The book should be limited to ten or twelve pictures. It is designed so that it may be used complete as a book, or as individual pages—each page carries one idea—each page constitutes an individual poster.

The Designer and the Observer

True, not everyone can go about designing a poster. There are many technical barriers which would balk most people. Actually, anyone who has an idea for a poster can conceive it visually himself, or interpreted through the skill of the artist.

Because the poster is a message directed to the public, the designer's foremost consideration is the person who will eventually see and stand before the picture and the idea.

As pointed out, the poster-maker must control the picture and the slogan for the sake of legibility and understanding. To go about it all, he must know the people—his public. He concocts and devises means and ways of avoiding confusion and maintaining a simple, unpretentious visual aid. He thinks and tries what he hopes will be acceptable by the observer.

Simply, to remain within reach of the people's confidence and sympathy he has perhaps the greatest choice and scope within the proverbs and sayings of their folklore. He can find no better support than the things the people know already to be good, and wise, and faithful.

In the case of fundamental education and adult education generally, the poster is directed to people who think and feel for themselves. The poster producer could not ram sentiment and rules into their perfectly fine lives. They want advice and direction—not commands and criticisms!

As for the child, the artist-designer cannot better illustrate the graphic conceptions understandable in the child's society than does the child himself. Given a subject, and an honest, simple talk, the teacher will find no better designer than the child for those posters and pictures directed within the domain and the community of children.

FILMSTRIPS

By JOHN BURTON, B.A., M.R.C.S., D.P.H.

FILMSTRIPS are series of still pictures on 35 mm. film designed for projection by transmitted light on to a white surface. The pictures may be mounted separately to form a set of slides. This makes for easier selection by the user.

There are numerous commercial productions[1] but the medium is well suited to amateur effort.

Among the many styles of presentation, the commonest are the instructional, the narrative and the case study.

The instructional approach uses a logical picture sequence on some particular subject such as Tuberculosis or Soil Conservation designed to illustrate a set lecture. The lecture is generally supplied in the form of notes, which also act as the links between the pictures. The audience is generally expected to ask questions in order to get the information clear. The medium is not intended to stir emotionally, but the aesthetic appeal of the pictures should not be overlooked, as this appeal will facilitate learning and memory.

The narrative approach, generally used for children and other unsophisticated people, conveys its information in story form and seeks to teach by identification of the viewer with the screen characters, resulting in the example being followed. This positive identification takes place most easily if the screen characters are essentially attractive or similar to the viewers. Cartoons can overcome this barrier and thus achieve some universality of identification, as is pointed out by Walt Disney (page 70).

The case study approach takes an actual incident, such as an accident or a family crisis or a social issue, and records in narrative style how this incident affected a particular group of people. The viewers are invited to discuss the problem further, to suggest how the story might have ended and reach their own conclusions regarding solutions.[2]

[1] See *Catalogue of Film Strips for Health Education*, C.C.H.E., Tavistock House, Tavistock Square, London, W.C.1, price 3s. 9d., post free.

[2] Cf. sound filmstrips on human relations by C.C.H.E. and Industrial Welfare Society and see *Group Discussion in Educational, Social and Working Life* (C.C.H.E., Tavistock House, Tavistock Square, London, W.C.1, price 3s. 9d., post free).

Making Filmstrips

The essential decisions in planning filmstrips concern (1) the intention of the producers, (2) the subject matter and its limits, (3) the audience, (4) evaluation, (5) costing.

The essential technical steps in production concern (1) the rough script, (2) the preparation of the final "shooting" script, (3) the shooting or drawing of pictures, editing pictures and text, and finally copying the pictures on to 35 mm. film.

Planning a Filmstrip

On good planning depends the effectiveness of the strip and the economy with which it is produced. Before preparing even a rough script the writer should be in possession of precise answers to the following questions:

1. Intention: Why is the filmstrip desired? What function is it meant to perform? What are people meant to do when they have seen it?

2. Subject: What information is essential to the strip? With what aspects of the question is the strip meant to deal? What should be omitted or disregarded?

3. Audience: To whom exactly is the strip to be shown (audience type, age groups, etc.) ?

4. How much money is available for production? This will involve considerations of length of strip, colour or black and white, sound or silent. Much money and time can be wasted if the promoters of the strip do not give due consideration to these questions.

With these technical data to hand the script writer prepares a rough "treatment" of the subject. In doing so he will have considered how best the strip can do its job in the circumstances in which it will be used: is it better to rely on a straightforward description or personalise the problem by centering the subject around an exemplary character? would it be better to present it as a problem, asking only questions, or set the subject in an emotional atmosphere in which reason will take second place to feeling ?

The treatment is then discussed with the sponsors and possibly tried out on technical experts in the subject, users and sample audiences. Bearing their comments in mind the final script is then prepared and from this the shooting script is made by marking all those points which require an illustration and writing down for the artist or photographer exactly what must appear in the final picture. For instance, "*Picture* 3. Child, 3 years old, taking English middle-class 25-year-old mother's hand to cross urban road. Mother looking to right. Traffic (one car) approaching. *Picture* 4. Mother's face with expression of horror

(close-up)." The pictures are generally photographs, drawings or mobile cut-outs.

The assembled pictures are then put in order, captioned if necessary, and title frames are inserted. The series is then photographed with any good 35 mm. camera possessing a copying device. Special studio cameras for this purpose are used commercially. This produces the master negative which can be printed on copying film. Numerous copies for projection can be made from the master negative.

With the advent of colour film it is now so easy for the amateur to take very satisfactory colour transparencies (2 in. × 2 in. slides) and to use them to illustrate talks that this method should be seriously considered. The pictures thus made will have the opportunity of being local, topical and tailor-made for the talk. The cost of the finished product is approximately one shilling per slide.

Very successful strips may be made by competent artists painting direct onto clear film or by etching the emulsion that has been blackened by full exposure and development.[1]

Filmstrips and slides are very easy to use and have certain advantages over motion pictures, notably of cheapness, simplicity of apparatus and controllability. (See Unesco booklet on apparatus.)

Filmstrips should not be expected to stand alone. They are an aid to a teacher. The use of captions should therefore be reduced to a minimum, as the pictures should be self-explanatory and the teacher free to interpret them in his own way.

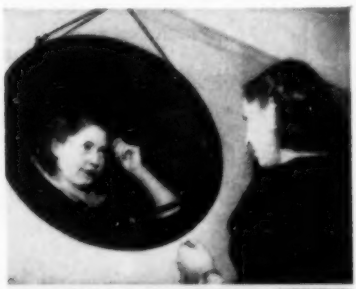
The technique of combining sound adds reality to the pictures and in the dramatised case-study type of filmstrip can give them an emotional dimension as great as the motion picture. The C.C.H.E. sound filmstrips use this technique for promoting discussion, taking as their subjects familiar incidents from real life. The characters in these strips are confronted with situations that might occur in any family and on which most people will have views. At a critical point the story breaks off and the commentator asks the audience what they would do if they were one of the characters involved. As there is no one solution to most of the important problems of life no solution is offered, but the audience is expected to learn the facts from the discussion, gain greater insight into their own and other people's attitudes to the problem, but finally to reach their *own* conclusions. Such subjects as atmospheric pollution, baby feeding, the mother and daughter-in-law relationship, the aged and retirement, and the best type of education can be dealt with in this way. These strips are designed to last four-and-a-half minutes; the necessary

[1] See "How to Make Animated Movies without a Camera", by N. McLaren, *Fundamental Education*, Vol. 1, No. 4.

Script of a Sound Filmstrip

"MOTHER, CAN I GO OUT TONIGHT?"

Frames 1–4. NARRATOR: Maureen Miller is nearly sixteen years old, and has just started to go out to work. She's the only child of middle-aged parents and recently she has felt that they are more old-fashioned and strait-laced than the parents of some of her friends.



Mrs. Miller is devoted to her home. She doesn't see why people have to go out when they have a comfortable home to sit in. For some years, however, Mr. Miller has liked going out. Two or three times a week he goes down to the "local" to play darts, and nearly every Saturday afternoon he goes to a football match.

Mrs. Miller has been looking forward to the day when Maureen will be old enough to be a companion to her. Now that Maureen *is* older she seems to prefer being a companion to anybody *except* her mother. Every evening when she gets home from work it's "Mother, can I go out tonight?"

Frame 5. NARRATOR: Then one evening there was a real row! Maureen came in from work and went straight upstairs to change. When she came down . . .

MRS. MILLER: "Maureen, what's that you've got on your face? Are you using make-up?"

MAUREEN: "Why, everybody uses make-up now, Mum. All the girls at work do."

Frame 6. MOTHER: "I don't mind a bit of powder, but I'm not having you going out painted up like a Dutch doll. And what's more, you've been running around a bit too much lately, my girl. You'll sit down and have your tea and wait until your Dad gets in!"

Frame 7. MAUREEN: "I *can't* wait. I'm meeting Corinne at half-past. I've got to go."

NARRATOR : And in defiance of her mother she rushes out of the house and slams the door.

Frame 8. NARRATOR : When Mr. Miller comes in he sees at once that his wife is looking very upset.

MILLER : "What's the matter, dear? Where's Maureen? Anything gone wrong?"

Frame 9. MOTHER : "I don't know, John. I just can't seem to understand Maureen these days. We've got a nice home; I spend all my time keeping everything comfortable and she can't even stay here for an evening. Tonight was the last straw. She rushed in, went straight out again to meet that girl, Corinne. Didn't have any tea. And you should have seen her face . . . looked like a clown in a circus!"

Frame 10. MILLER : "You worry about her too much, Mother. All the youngsters in the office wear make-up. It doesn't do any harm. Maureen's a good kid at heart. It's just her age, that's all."

Frame 11. MOTHER : "That's all very well. You know I'm not fussy! But if she gets into trouble what are you going to say then? Half the time I don't even know where she is. And you encourage her, you're always out yourself."

Frame 12. MILLER : "Well, I like that! How many times have I asked you to come too? What do you always say? There's the washing or the ironing or the bottling or some other excuse. You can't expect everyone to want to stay at home all the time."

Frame 13. MOTHER : "Never you mind about me at the moment. What I want to know is what you're going to do about Maureen. I'm not going to stand for it. Anyone would think I was running an hotel."

Frame 14. NARRATOR : John Miller is worried. He doesn't believe that Maureen really means any harm. But he can see his wife's point of view. Also his conscience is a bit uneasy about the number of times he leaves his wife on her own. How is he going to tackle this problem? If you were John Miller . . .

WHAT WOULD YOU DO?

information and atmosphere is created by dialogue and commentary, which are recorded on 78 RPM gramophone records. Using these sound filmstrips we are satisfied that intense interest can be aroused in almost any subject in people of all levels of sophistication, provided the theme is one that concerns them directly. Discussions generally last 1–2 hours and are often followed by valuable conclusions. Even if no conclusion is reached the discussion is often a therapeutic experience in itself. The sound filmstrips are best used with small groups, but can be used with audiences of up to fifty. Not the least of their advantages is the degree to which they interest and inform the teacher or group leader about the views and misconceptions that are prevalent in the group.

In my opinion there is no more effective method of promoting full participation by group members and thus more active education.

PICTURES

- Today the emphasis is more and more on talks, discussions —instructive or otherwise—on every conceivable subject. But they all have one thing in common, you cannot get far without illustrations—many and various.

- For this purpose filmstrips are unequalled. Everybody can see, there is a vast store of material to draw upon and they are inexpensive. Moreover if you do not find exactly what you need a strip can be made to your requirements quickly and cheaply.

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MOBILE PICTURES

By JOHN BURTON, B.A., M.R.C.S., D.P.H.
Medical Director, Central Council for Health Education

WHAT does the speaker look for in a visual aid? First, something which makes his point more clear, something which illustrates exactly the point he wants to make, no more and no less, something which is cheap and portable; and he usually considers it a great advantage if it is aesthetically agreeable and essentially stimulating.

Still pictures, models and movies obviously fill some of these criteria, but none so completely as the mobile picture. The most elastic and practical varieties of mobile picture are the flannelgraph and the magnetic blackboard.

Both are similar in operation though different in structure. The principle in both cases is that movable objects are made to adhere temporarily to a background. In the case of the magnetic blackboard the background consists of a sheet of mild steel painted black, and the illustrative material is fixed to small halfpenny shaped magnets. In the case of the flannelgraph the backboard is covered with flannel (black, white, or coloured) or similar soft material, and the objects, which may be outline pictures or even light three-dimensional models, are mounted on to thin felt or lint. It will be found that by smoothing the objects on to the vertical flannel-covered backboard excellent temporary adhesion is obtained. Using this technique the speaker need only put on the board what he is talking about. He can then gradually build up the graph, "isotype" or picture stage by stage and move parts of his illustration at will. An elaborate illustration can if necessary be achieved without the speaker turning his back on his audience for more than a few seconds. The capacity to draw rapidly on a blackboard in front of an audience is not a widespread gift, and the technique overcomes this difficulty by enabling the speaker to prepare his visual material carefully beforehand and avoid the anxiety entailed in the impromptu performance.

These mobile pictures are particularly useful in extending the range of the picture by giving it three dimensions. By using outline cut-outs in thin felt it is possible to build up illustrations layer upon layer, thus showing not only the lateral relationships of the objects, but their depth relations as well, as in Anatomy or Town Planning.

Their most obvious use is to make a statement. In Figure 1 Social Medicine is shown to involve physical, social and mental health, and that these aspects of health overlap. In administrative terms, we must consider them in relation to various activities in preventive medicine, such as child care, accident prevention, etc., and that these activities have physical, mental and social facets. In Figure 2 an argument is introduced. It is shown that for their solution the public health problems of to-day require education of the public and that this in its turn requires trained people. But the whole structure depends on the community providing the time and money which support the whole.

Mobile pictures present a unique opportunity for extending the range of audience participation. With most visual aids the audience are expected to be passive observers. Not so with the mobile. In any teaching situation in which there are various choices which need to be made and discussed these choices may be presented on the board and the audience given the objects which they are then asked to put in the appropriate place or category. For instance, in teaching the proper storage of food (Figure 3), the audience is asked where food is commonly stored, and it is generally stated that the refrigerator, the cool larder or the cupboard can be used. A discussion on temperature in relation to storage follows. Symbols of the three types of store are placed on the board, and pictures of various different local foods are handed to the audience, who are asked to store them. When each member has made his choice the speaker obtains a very good idea of the level of knowledge of his audience, or their local prejudices, and can then lead discussion on the correctness or desirability of the various choices made. He can ask the audience if they agree with the positions of various objects and, if not, why not. If they suggest moving them he can again ask why and get discussion centred on each detail which he or the audience considers of importance. When this has been done the teacher can make the problem more difficult by removing the refrigerator, on the grounds that few people have one, and asking what should be done in the new situation.

With the same symbols as for storage, nutrition may be discussed, using a slightly different principle. The circle on the board is described either as a plate or as the circle of nutrition. On a simple level, students are asked to concoct a balanced meal on the plate from the symbols they have in their possession. On a higher level, the circle is converted into a circle of nutrition and the various foods are placed within it according to their nutrient qualities: milk, being a complete food, goes in the middle; meat, being mainly protein and fat, is placed at about twelve o'clock; butter, being mainly fat, at one o'clock; syrup, being mainly carbohydrate, is placed at three o'clock; and greens, being impor-

Figure 1. The flannelgraph : The background and content of social medicine.

Figure 2. The flannelgraph : The statement turned into an argument.

Figure 3. The flannelgraph : Hygienic food storage by multiple choice and audience participation.

tant nutritionally from the point of view of vitamins and salts, are placed at about seven o'clock. The arranging of the foods within the circle forms an excellent subject for discussion.

The triple choice method used in the storage flannelgraph is

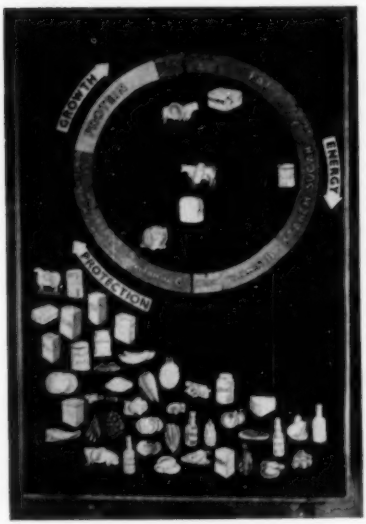


Figure 4. The flannelgraph : Nutrition.

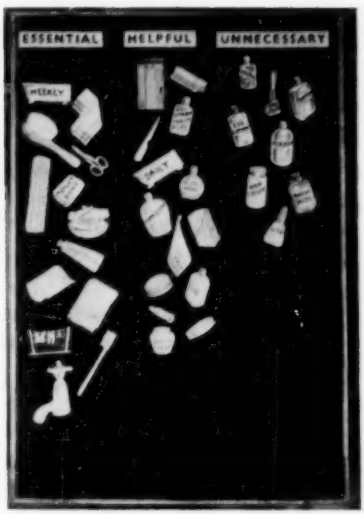


Figure 5. The flannelgraph : Personal hygiene choice.

also employed for personal hygiene (Figure 5). In this category would fall discussion on the planning of a town, the nutritional requirements of a child, the siting of machinery in a workshop, or the essential requirements for a rural health service.

The two following flannelgraphs, dealing with infection (Figures 6 and 7), lend themselves to didactic teaching, and also to the question and answer technique, the chain or circle being built up by questions and answers and the methods of breaking the chain or the vicious circle being asked of the audience.

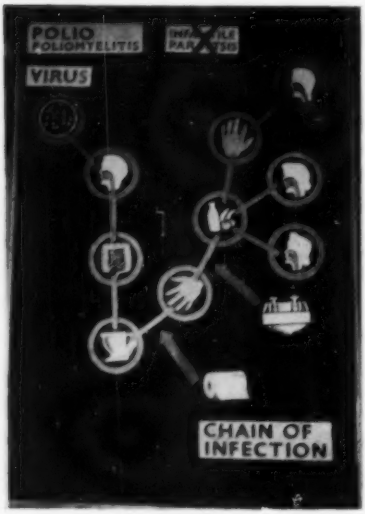


Figure 6. The flannelgraph : Chain of infection.

Figure 7. The flannelgraph : Vicious circle.

The flannelgraph and magnetic blackboard have considerable dramatic and aesthetic appeal. First the background, a clean colour, say black, is unlike the blackboard which is usually a messy grey. The objects are selected for their simplicity but may

vary from a formal isotype figure to a reproduction of an oil painting or the model of a tractor. The formal objects can generally be in brilliant primary colours such as scarlet, blue, yellow or white, which are clearly visible at a considerable distance. Words can be written on strips of white paper with Indian ink and used for building up a purely verbal scheme or as captions to the illustrations, which saves time and increases visibility.

The construction of the flannelgraph is fairly simple. The background is made by throwing a piece of Dorset Crêpe or other flannel material[1] about a yard square over a blackboard and pinning it round the edges to keep it flat. For outline cut-outs thin coloured felt is generally found to be most suitable as it can be obtained in a variety of colours. Where words or more complex pictures are to be shown the picture or cartridge paper is taken and spread with a light, slow-drying adhesive. Lint is then applied to the whole sheet, rough side outwards and smoothed together without pressure. When dry the words or drawings are made on the paper and then cut out as required. It has been found recently that for paper symbols which will not have to remain up for long all that is necessary is to roughen the back of the paper with sandpaper and adequate adhesion to the backcloth takes place. The best paper for this purpose is soft cartridge. The cost is negligible and the whole outfit for a complicated statistical presentation can be carried in a jacket pocket.

The flannelgraph has a very considerable interest value for the audience; in fact, its danger lies more in the tendency for students to become absorbed in the technique to the exclusion of the data presented.

Words and pictures are plainly visible at far greater distances than is the case with the normal blackboard or chart presentation. But like all aids, it cannot do the work for the teacher—it can only present his case more forcefully. Its full potential will only be achieved by a combination of skilful handling and artistic imagination.

The speaker who enjoys his subject will welcome the discipline of turning his abstract ideas into visual symbols.

[1] Obtainable from C.C.H.E., Tavistock House, Tavistock Square, London, W.C.1.

MOVING PICTURES

EDITORIAL NOTE

The symposium on films which follows illustrates some principles of film production and usage which are valid in both sophisticated and unsophisticated communities. "Films are great interest rousers, but that is their main job; other methods must be used if education is to be done."

The film is an expensive educational medium and should therefore be produced and used with the utmost care. Knutson's criteria of planning and evaluation are valuable guides (page 17).

What can films be expected to do? By combining sight and sound, movement and inflexion, films are able to approximate more closely to reality than most other media. It is, however, reality highly selected by the producers, who are frequently remote from local conditions, tastes and ability to comprehend. In this lie two dangers: the cultural domination by the big producing countries over the non-producers; and the resistance on the part of viewers to the film because of its "foreign" setting, speed or conventions. These matters are considered by all the contributors. The Colonial Film Unit, under its Director, Sellers, has made a valiant and successful attempt to enable non-producing areas to enter the field, and the success he records is encouraging.

Because of the style of their expert and often costly production, films have considerable authority and completeness, and the tendency is to cease to regard them as aids but rather as self-sufficient media. The producers, with a few exceptions, endeavour to tell a complete story and state a case didactically, with a beginning, middle, and end. The exhibitors often accept this passively, accept each film as the last word on the subject, and proceed to fit them into an assorted programme as imaginatively or otherwise as they are able. The viewers very frequently accept the passive role which is allotted to them, come, see and are conquered. This is particularly the case with sophisticated audiences, accustomed to films as light entertainment.

Using films as aids, however, means that the teacher is in command and must use them selectively to explain his argument or to act as a basis for discussion. He should be able to switch the projector on and off to illustrate a single point, to repeat it, to use it as a focus of discussion if necessary. He can overcome the authority by criticising the film himself and the passivity by inviting the viewers to do so. He can thus turn the film from a

didactic to a socratic medium. He can cut off the showing before the end and invite the audience to complete the story themselves.

Used in this active way, films can become powerful aids; they can convince, as Spurr shows, that cattle can swim or that children do not suffer when injected. They can demonstrate how to do a job effectively, as Mrs. Coppen points out, they can transgress the laws of nature, can reveal imperceptible movements and invisible details, but, most touching of all, they can show mankind to himself, which is, for mankind, the most interesting thing he knows.

It is elementary to state that every film user should know his film well before showing it and it is worth his while making a systematic appraisal (see pages 106–7), but perhaps the most constructive and critical thing he can do is to make his own films. This can now be done at a very reasonable cost on 16 mm film, and sound can be added by the process of magnetic "striping" or by the use of a tape recorder.

In the production of films the same procedure should be adopted as mentioned for film strips (page 57) and by Walt Disney, with the addition that the shooting script must be fuller; it is on the thorough preparation that the economy and the success depend (see *Amateur Film Making* by George H. Sewell, published by Blackie and Son Ltd., London).

In conclusion it is our opinion that there is no reason to suppose that films are more effective than other much cheaper visual media *except* when movement or behaviour (as in dancing, children's play, the technique of bandaging), or drama is an important feature of the thing to be conveyed; that for small groups of up to thirty people, where discussion is possible, the film can have definite disadvantages unless skilfully and critically used, precisely because of its completeness and rigidity; that for large audiences where the aim is mainly to rouse interest in a broad sense, and in the absence of competent teachers, the film is a most valuable educational medium and is well worth a reasonable expenditure of time and money.

ANIMATED CARTOON

By WALT DISNEY

THE documentary film cartoon has conclusively proved its efficacy as a widely applicable medium for instructional purposes. It has been especially useful in reaching adults often beyond other channels of timely information. And while its history is as yet comparatively brief, its possibilities are considered almost limitless in the broad areas of education.

Our experience in developing animated cartoon techniques as educational adjuncts is thought to have considerable value for workers in the visual aid field for adults. On that assurance, I am only too glad to give an account of our pioneer efforts for whatever value they may have.

The first experiments in reaching civilian populations were worked out in alliance with the Office of the Co-ordinator of Inter-American Affairs during the Second World War years. They dealt chiefly with problems of health, sanitation and elemental education in Latin American areas regarded with concern by their respective governments.

We made the documentaries on invitation, in closest co-operation with South and Central American countries, and Inter-American Affairs distributed them in accord with local authorities.

Preliminary research for development of our patterns involved social and political considerations as well as medical and hygienic. Races of various culture and levels of enlightenment added complex human elements to whatever technical formula we might work out. Thus these particular instructional films posed very special kinds of preparatory research.

Yet, basically, the job was to find the most direct address to great masses of people who could be benefited and enlightened by what we could very simply visualise on the screen in from 10 to 15 minute fact films.

To get first-hand knowledge of our intended audience we made an invitational staff survey of people, places and conditions in certain districts of Mexico, Salvador and Guatemala.

Conditions and needs there observed were typical of many other Latin American regions so that our pictorial lessons were found equally serviceable throughout much of the hemisphere.

In every instance government officials, health and educational authorities pointed up the problems to be encountered and eagerly co-operated.

This survey was followed by seminars at our Burbank studio, where Latin American delegates sat with us to plan and outline our projects. These were the policy advisers, familiar with the needs of the people to be reached. They told us about the limitations and prejudices of segments of their populations, especially the backward Indian folk in remote regions. Many of them fatalistically accepted scourging disease; were primitive in hygienic practices. Many of them were almost beyond the reach of ideas and remedies through language. Myriads of them had never been taught to read, or had forgotten how.

These were the people who might be reached through pictures —moving pictures conveying elemental facts and truths, principles and practices that would make their lives more endurable, comfortable, safer for themselves and their neighbours. The very nature of health and the causes of disease was a mysterious, superstitious thing to them.

This vast audience to which we had to adjust our approach and techniques, we realised, would offer perhaps the greatest conceivable test for the instructional potency of the cartoon documentary.

It would be almost miraculous if one brief showing of a film cartoon—one primary lesson in what to do about malaria, hookworm or other infectious scourges—could take root in the mind of such benighted folk and start a chain of remedial action.

Yet that is just what occurred; just such miracles were later reported all through the areas where these films were shown. Whole villages began to co-operate with governmental health authorities to alleviate their miseries.

Often the films were projected on screens set up in village streets and plazas and shown under great handicap. Many of the beholders had never before seen a movie. Audiences stood, amazed at what they beheld, and were further reassured by narrators who brought the film from the nearest government health department.

The same thing occurred over and over in other parts of the world to which prints of the health documentaries, especially, were quickly distributed by our government agencies.

Immediate benefits of these films were in a good measure intended for protection of our military elements in many parts of the world as well as for the welfare of the native population. Education in this case had critical immediacy. It was intended to promote quick results in helping reduce all sources of contamination from bad drinking water; all focal points of infection and epidemic, wherever our troops were stationed.

So well did we hit our target that these same films are still in wide and steady circulation from the U.S. Government library. A total of some 1,600 prints in 16 mm. have at one time or another been in non-commercial use.

And in this connection it must be made clear that only under war-time urgency could they have been thus produced and distributed, for they were costly non-profit films. They required sponsorship on a national scale to make them at all possible.

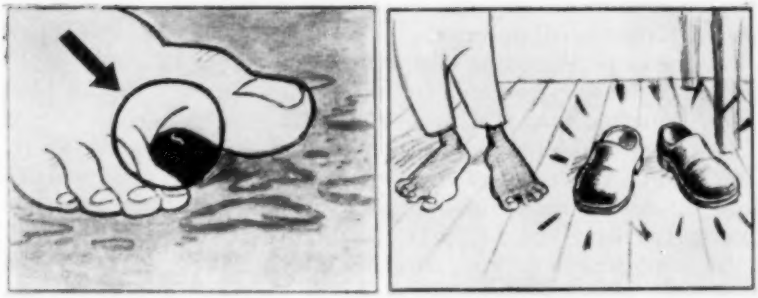
I dwell on these circumstances because they indicate the kind of research and intense effort which brought to birth the early documentaries for adult education—research of living human beings who were to be the beneficiaries, rather than a delving into books and case histories for necessary information.

This told us not only what to say, but how to say it most effectively in such documentaries as *Water—Friend or Enemy*, *Defense Against Invasion*, *The Winged Scourge*, *Hookworm*, *Tuberculosis*, *Nutrition* and *The Grain That Built a Hemisphere*, the graphic story of corn.

Of course we had to have experts to advise us about correct technical procedures. When our projects were outlined and before we actually began production, panels of experts supplied by the Inter-American Affairs administration sat in with us at the studio as guides and consultants. Surgeon General Parran of the U.S. Health Department came out from Washington for story conferences on the malaria film, *The Winged Scourge*. General Dunham, attached to the U.S. Army and head of the Latin-American health programme, detached an assistant to work with us and to get whatever technical information we might require. As each project demanded, we got similar medical, technical assistance, extending from the clinical details to the broadest humanitarian levels.

Health, hygiene and nutrition topics, of course, had additional vast library sources of accurate available information. But here, too, we relied on our consultants to translate and focus special knowledge into the direct screen values we needed to give our 10- to 15-minute documentaries practical worth. The watchword was constant counsel and supervision by the best available authorities on any subject. For we at the studio are artists, animators, story tellers, showmen, rather than scientists or specialists in any other line.

More than in any other field of visual communication, the documentary animator must have the required information for any subject literally at his finger tips. He conveys ideas, teaches, with his drawing pencil. He can't quibble or evade. He can't take refuge in words. He has no props. He's got to talk straight in the world's oldest language—pictographs—things the eye instantly comprehends and transmits to the mind.



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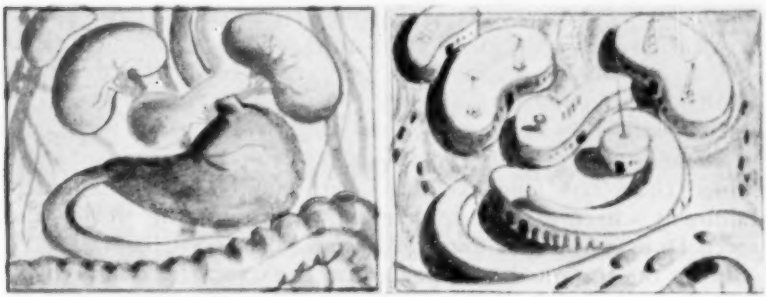
How the hoökworm invades the human system through the feet and the blood stream is indicated in one of these sketches for *Hookworm*, and the protective value of shoes in the other.



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These sketches, used as guides by animators for *Defense Against Invasion*, illustrate the use of analogy in the particular problem involved. The citadel at the right is shaped like the human body organs to point up the most vulnerable regions of invasion by germ enemies.

Now, as we came to actual production processes in these early documentaries, the animating artists took over from the medical and scientific experts. They were saturated with specific information.

Their job was to tell in unmistakable terms the story of how the anopheles mosquito spreads the dread malaria and how the scourge can be stamped out. They had to make clear to untutored minds the story of the hookworm and how that enervating parasite enters the human system. They had to tell half-starved people in mobile drawings how and what to eat, with diets at no greater cost. How tuberculosis can be conquered and checked; how, in picturesque abridgement, a native grain was cultivated to found the great Mayan civilisation. They had to tell not only how vaccination operated in *Defense Against Invasion*, but in a way calculated to eliminate the dread, especially in youngsters, of the prophylactic needle. In *Water—Friend or Enemy*, the dangers of deadly pollution as well as the life-giving necessity of water

had to be unmistakably impressed. These and half a dozen other major projects—all in terms with symbols the most backward and illiterate of people could comprehend and profit by.

Before the storymen and the animating artists can put this kind of information into precise form—and at the same time keep it fascinating to the beholder—they themselves must resolve a subject into its very essence. Every action of characters, every scene and situation, must have clear-cut meaning. They must be patiently checked and rechecked with their criteria or their collaborative experts for unquestionable accuracy.

Simple as A B C they had to be as they finally went to the screen—these picture stories addressed to untutored people. For that is literally what they were: primary lessons for handicapped adults in matters most closely affecting their daily lives and fortunes.

Often the documentary craftsman gets his point over with a laugh. A linear sight joke. It's a quick way to a beholder's mind —to acceptance of a statement or a premise. It works as well with adults as with children ; is as agreeable to the sophisticated as to the ignoramus, by that strange spell the moving cartoon can exert.

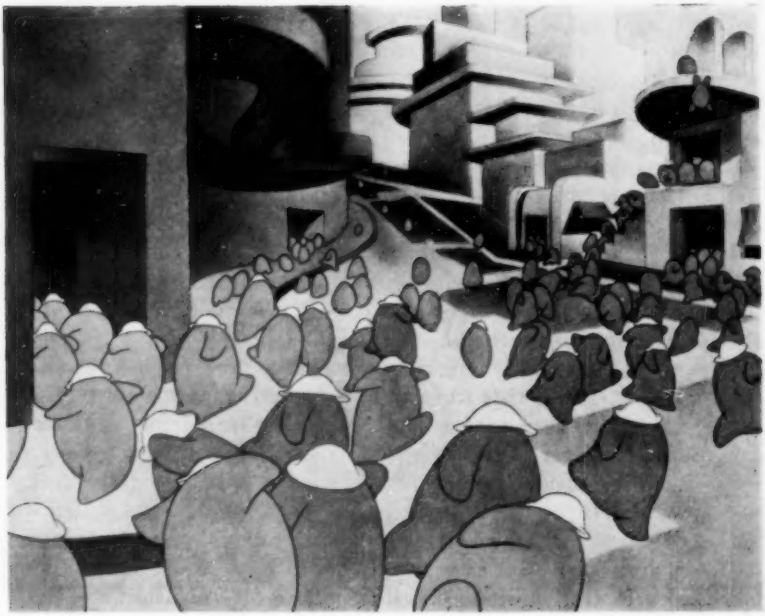
A case in point: In telling our story of malaria, we used some fabled characters long associated with happy, humorous entertainment wherever pictures are shown around the world—the seven Dwarfs from our *Snow White and the Seven Dwarfs.*

From the instant they appeared on the screen in *The Winged Scourge* and explained how malaria can be stamped out, Happy and Doc, Bashful, Grumpy, Sleepy, Sneezy, and Dopey were implicitly believed—even in the remotest regions of motion picture territory.

If the Dwarfs said it was so and advocated the way to deal with a plague, there was no question about it. They exercised more authority with their amusing antics than some of the learned doctors from state bureaux of health, as the doctors later agreed.

The serio-comical demonstration of the seven little fabled men was an educational wedge which local health and educational authorities were quick and happy to use in their disease prevention campaigns. It taught us a valuable lesson, too, in formulating our documentary techniques for subsequent projects. It was this:

Let the informative material ride along on entertainment as much as possible ; use comic anecdote and character antic freely. For, although it has been said by pundits of psychology that painful experience is the most effective spur of memory, we have found in analysing our informative entertainments over many years that the fun factor is even more potent. That was the ancient way of fable, and it is still a sure way into the minds and hearts of people.



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From *Defense Against Invasion.* This scene shows the defensive soldiers in the blood stream, reinforced by vaccine troops, mounting the parapets to defeat the invaders.

But fun must never imply that the documentary cartoon is insincere. We had to guard against this possible misconception among people accustomed to associate cartoons entirely with fantasy. You can discount the truth with excessive laughter as well as with the boredom of ponderous belaboured soberness. This is a latent property of the very nature of the cartoon—its caricatural exaggeration.

From our early experimental efforts with the animated cartoon we have come to see its enormous possibilities both in entertainment and educational fields. The cartoon documentary can probe into and explore the nature of things completely beyond the scope of the camera, the microscope, and other scientific implements.

Anything the mind of man can conceive and logically anticipate, the hand of the intelligent animation artist can represent. The functions of the human body; the structure of the atom; a truth, a principle, a phenomenon about our physical universe and living nature which is beyond the reach of the human eye and the camera's lens.

We have recently applied the documentary approach to our wild-life nature factuals, the True-Life Adventure series. For these features our naturalist-cameramen photograph what they actually see in the field. Here patience and vigilance and the

had to be unmistakably impressed. These and half a dozen other major projects—all in terms with symbols the most backward and illiterate of people could comprehend and profit by.

Before the storymen and the animating artists can put this kind of information into precise form—and at the same time keep it fascinating to the beholder—they themselves must resolve a subject into its very essence. Every action of characters, every scene and situation, must have clear-cut meaning. They must be patiently checked and rechecked with their criteria or their collaborative experts for unquestionable accuracy.

Simple as A B C they had to be as they finally went to the screen—these picture stories addressed to untutored people. For that is literally what they were: primary lessons for handicapped adults in matters most closely affecting their daily lives and fortunes.

Often the documentary craftsman gets his point over with a laugh. A linear sight joke. It's a quick way to a beholder's mind —to acceptance of a statement or a premise. It works as well with adults as with children ; is as agreeable to the sophisticated as to the ignoramus, by that strange spell the moving cartoon can exert.

A case in point: In telling our story of malaria, we used some fabled characters long associated with happy, humorous entertainment wherever pictures are shown around the world—the seven Dwarfs from our *Snow White and the Seven Dwarfs.*

From the instant they appeared on the screen in *The Winged Scourge* and explained how malaria can be stamped out, Happy and Doc, Bashful, Grumpy, Sleepy, Sneezy, and Dopey were implicitly believed—even in the remotest regions of motion picture territory.

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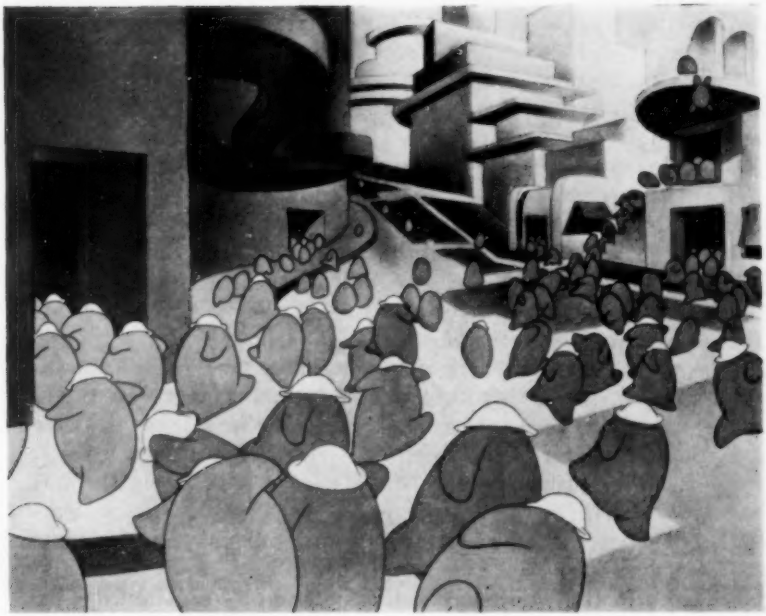

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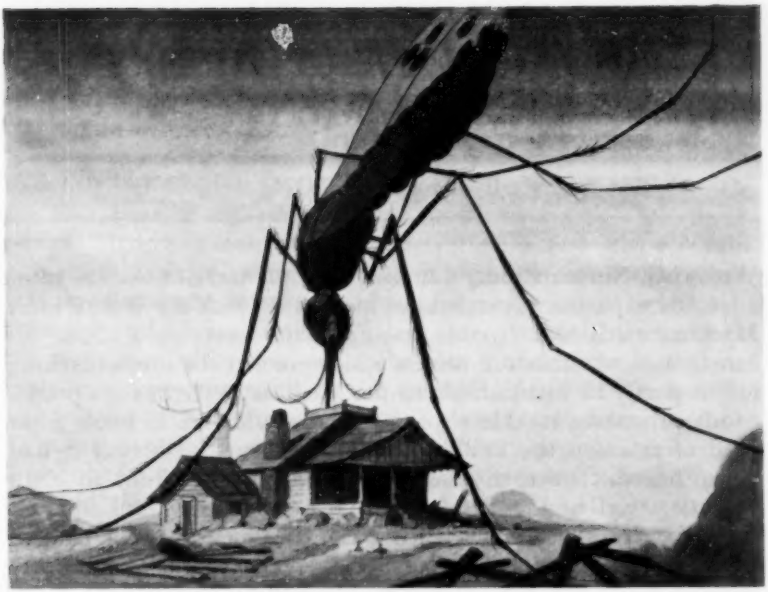
We have recently applied the documentary approach to our wild-life nature factuals, the True-Life Adventure series. For these features our naturalist-cameramen photograph what they actually see in the field. Here patience and vigilance and the

repertorial accuracy of the colour cameras take the place of the short-cuts the cartoon documentaries can effect. There is no editorial tampering with the facts of living nature, filmed in dramatic sequence. These features, too, have been declared of educational value.

Whereas our wartime documentaries took an average of six months to prepare and produce, True-Life Adventures like *The Living Desert* and the forthcoming *The Vanishing Prairie* were fully three years in the making. *The African Lion* and *The Elephant Story* out of Africa, completely authentic living documents out of nature's own wild archives, also will have been over three years in filming by the end of this year.

May I be permitted here to pay my respects to the animation artists who practise this unique and comparatively new method of visual education? The efficacy of the animation documentary depends upon their practised skill, their amazing resourcefulness, their genius for communicating ideas and various phases of knowledge through their facile fingers, with pencil and brush.

I hold them second to none in the arts of teaching, and their craftsmanship an invaluable supplement to text book, lecture and laboratory in the whole expanding sphere of education.



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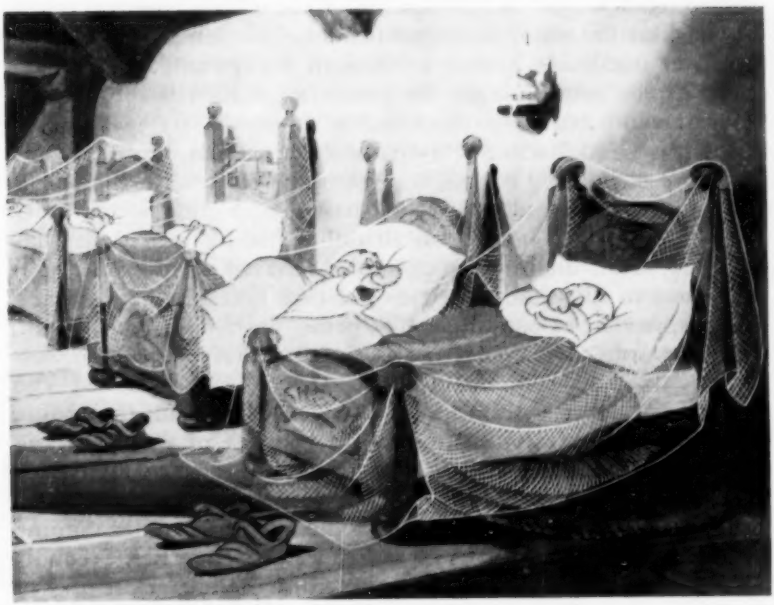
From *The Winged Scourge.*



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From *The Winged Scourge.*

ANOTHER WALT DISNEY EXPERIMENT

By K. PICKERING

When Mr. Norman Spurr described, in *Colonial Cinema* for June, 1951, the experiment carried out in Uganda with the Walt Disney Mackie health film *Hookworm*, his main reservation about his conclusions was that the success which greeted the film's teaching might partly be attributable to the Medical Department's propaganda preceding it. He wrote: "One would like to know what kind of reaction the audience would give to the film if it had never heard of the disease, although suffering from it." In August, 1953, in the Gold Coast, the reaction of the film on precisely this type of audience was experimented with by two Officers of the Department of Social Welfare and Community Development, Mr. Shirer and Mr. Pickering.

Both experiments were carried out to resolve or confirm misgivings felt by experienced African and European officers, that the highly developed cartoon technique with its graphic imagery and screen "magic" might obscure, if not destroy, the real lesson of the film for unsophisticated illiterate audiences. Again, the film was not made against an African background, and, in the Gold Coast, some thought the presentation of what, in such an environment, might be described as revolutionary ideas about disease, was too forcible and dramatic for acceptance.

Before comparing results, it must be noted that, at the outset, in both Uganda and the Gold Coast the original sound track supplied with *Hookworm* was abandoned and a vernacular commentary substituted. Two examples referred to in each report will serve to illustrate the type of change necessary. "Charlie" is described in the sound track as being "robbed" of his health by hookworms. Mr. Spurr's revised commentary, as quoted, substitutes "What Hurt You Charlie?" for "Who Robbed You Charlie?" The Gold Coast report, dealing with this point, describes the confusion caused by the trial use of a literal translation of the sound track when some people affirmed afterwards that they actually saw "thieves running away" in the film. Too much was being demanded of an audience whose understanding of theft was the physical abstraction of visible properties. Secondly Mr. Spurr records the confusion caused by the big "close-up" of the hookworm which, without clarification from the commentator, Gold Coast audiences imagined as various types of large animal.

A commentary adapted for such audiences must serve three main purposes. It must override any confusion of Western conventional behaviour and familiarise the background of the action by substituting local names and customs. Thirdly, it must, in the minimum of words, clarify the action of the film.

Using the adapted commentary, both the experiments revealed that original misgivings had been surprisingly exaggerated. On the first, that of the effect of " white man's magic," Mr. Spurr writes, " It would seem that as long as the film followed a reasonably normal narrative presentation, or explained itself when there was any departure from the normal, e.g., when Charlie's skin is removed and his intestines revealed, then the audience accepted the technique. However, when the film introduced a traditional cartoon comedy approach, e.g., in the building of the latrine, this was put down to European magic." An excerpt from the Gold Coast report closely parallels this. " Many people, while they knew that Charlie's building of the latrine was pure 'magic', believed that hookworms do bite the stomach walls as they are shown ". Both audiences proved to have understood why the latrine was necessary. These and other examples amply convinced the authors of the experiments and the observers that the attributing of the humorous sequences to European magic does not impair either understanding or belief in the teaching.

Again, Mr. Spurr states on reflection after the experiment that he is " not at all sure that there would have been a tremendous gain in perception had the character and background been African ". This opinion is shared by the Gold Coast authors. The fact is that neither the characters nor the background in the film have nationality. They are cartoon characters in a world of " make-believe " but they and their story are recognisably human and credible. The devotion to simplicity and avoidance of visible characteristics attributable to any one people make it relatively easy, with the vernacular commentary, for the audience concerned to identify themselves with the story of the film.

These considerations apart, both reports strongly recommend the cartoon technique, with its unlimited flexibility, as a remarkably effective teaching aid. Its two main advantages over the straightforward film, as demonstrated by Disney, are in maintaining a consecutive narrative and in leaving nothing to the imagination. When " Charlie " takes his medicine the audience is actually given a visual picture of hookworms relaxing their hold on the wall of his stomach and dying. Similarly, as Mr. Spurr records, " due to the brilliant choice of the visual image and associated action, the movement of the throat as the hookworm sucked at the wall of the intestine, there is no doubt that the audience knew what was happening ". Though such pictures may be fanciful and exaggerated they carry conviction, and both

experiments show that unsophisticated African audiences are willing to accept their teaching.

Further experiments in the Gold Coast showed that all the Disney health films possess the advantages and limitations ascribed to *Hookworm* in varying measure. *The Way Disease Travels,* for example, tells a straightforward story with an excellent recapitulation of the lesson and with a minimum of "magic", whereas *The Winged Scourge* confuses its audience with the introduction of the seven dwarfs in a lively battle against fearsome-looking mosquitoes. All, however, with careful handling, have the two qualities attributed by Mr. Spurr to *Hookworm* of unquestionably making a deep impression and of summarising the salient points vividly and unforgettably.

It is, however, precisely because the Disney health films make so powerful an impact that so much care must be devoted to their use. They are too important to be used indifferently. Inquiries in the Gold Coast of audiences who had seen, discussed, and thoroughly understood *Hookworm* a few weeks earlier revealed that in most cases the visual images remained, but out of sequence, and the lesson had been lost. More dangerous, the effort to reconstruct the action from the images produced grossly distorted ideas. Again, the effort to understand more than one film simultaneously produced a confusion of causes, symptoms, disease and methods of infection which increased with the passage of time. Further, and more grave, in a few cases, the initial reaction was short-lived and belief had given way to scepticism.

It seems that the true character and function of Disney health films must be appreciated if their value is to be utilised. This can only be done in relation to the background and environment of the audience concerned. Experience shows it is an illusion to suppose that, because a society is illiterate and superstitious, firmly rooted ideas about disease do not exist. They are in fact the greatest obstacle to the dissemination of new ones. The unique role of the Disney cartoon film is less in teaching the new than in breaking down the traditional belief where it is too erroneous to be used as a starting point for teaching the truth. It achieves this by shock tactics, by presenting a graphic and credible picture to the mind so realistically that temporarily the mind's resistance to it is overcome. It is at this stage that the mind is truly receptive to the follow-up teaching and the value of the film strip, flannelgraph and discussion group, with all the opportunities they afford—unlike the films—of "two-way traffic" is enhanced accordingly. It is in this preparation of the mind for learning new things that the Disney films offer a contribution of significance in the battle against disease in Africa. In isolation their dangers are manifest. Used as a complement to other forms of teaching, their potentialities are profound.

EXPERIENCE WITH TWO FILMS IN TANGANYIKA

By NORMAN F. SPURR
Film Research Office, Tanganyika

It is becoming clear that the successful application of visual aids is directly related to the emphasis placed upon the visual material as an "aid", and the following notes are concerned with two films, *Smallpox* and *Dipping*, which have been used successfully in Tanganyika. The two films differ in several respects: *Smallpox* was made in Nigeria on 35 mm. film stock and by a small unit of professional film makers, and *Dipping* was made on the opposite side of the continent in 16 mm. colour by a professional one-man unit.

In January 1952, the Port Health Office, Dar-es-Salaam, received a report of an outbreak of smallpox in a nearby village. It was decided to start a mass campaign of vaccination in the coastal belt affected. This was well advanced when the possibility of the use of a film was discussed.

The intentions of the makers of the film were unknown to us, but in this case it was the intention of the user which was of paramount importance, and we wanted to know if it were possible to use *Smallpox*, either as it stood or with alterations, to combat a certain amount of local resistance to the vaccination campaign. The film emphasised the following points:

(*a*) Vaccination is a free protective measure available at all times.
(*b*) Smallpox can cause death, blindness, and disfigurement.
(*c*) Early treatment can effect a cure.
(*d*) Concealment is a social crime and a personal danger.
(*e*) A Health Department's job is to protect the community.

In our opinion the one weakness lay in the implicit suggestion throughout the film that vaccination gave complete immunity, and so we revised the commentary, and gave a talk before each showing of the film to make the point that vaccination would minimise the risk of infection, and should a person catch smallpox, the attack was likely to be a mild one and the chances of recovery excellent.

The innate parochialism of our audiences made us fearful that differences in locale, and in the method of vaccination, might

cause criticism and prejudice the message of the film. The following typical remarks overheard by our observers being made by members of the audience to each other, or out loud as an expression of emotional impact, witness the fact that our fears were groundless.

"I don't want to be Mr. Alabi (a character in the film who caught smallpox). Let me be vaccinated."

"This disease can easily spread and kill others."

"Yes, this is smallpox, just like we get it."

Ultimately the success of the visual aid could only be measured by the positive action taken by those who saw the film. After one of the shows a man got talking to our commentator and during the conversation said: "When the vaccinators first came here many people fought to avoid them, but this time they come willingly—Europeans are crafty."

No other visual aid was used, and the briefing of the commentator consisted of getting the timing of the commentary right. This was given in the local language through the film-projector's sound system, and replaced the original photographic sound track, which was switched off.

Our success was due to three things: association with a campaign, immediate vaccination as an outlet for the emotion aroused by the film, and a film of simple construction told at the level of African understanding. Although there must be a limit of tolerable difference between what is shown on the screen and the experience of the audience seeing the film, the use of *Smallpox* is an interesting example of the value of visual material used in an area outside its country of origin.

Dipping was made in the Iringa District of Tanganyika for the Dipping Scheme at the request of the Veterinary Officer in charge, Mr. G. Yeoman. The scheme was designed to control the ticks which carried the parasite responsible for cattle deaths by East Coast Fever, and at the time of the making of the film, the scheme was still in its voluntary stage. A number of dips had already been constructed and were in use, and others were under construction, but to many of the tribesmen the idea of dipping brought deep misgivings. This was in no way a reflection upon extensive and thorough propaganda of the sponsors of the scheme. Despite all this, rumour was rife, and at the time the film was made a story was being circulated that the dip was poisoned and cattle would die as a result of entering it, even if they were not drowned in the process. This rumour gained such force in one area that cattle were being sold at the local markets well below ruling prices so that owners might escape the dread results of dipping.

The scheme had received the assent and blessing of the Hehe Council, which meant that the tribal leaders were prepared to pass

rules of a compulsory kind when the time was ripe, for the success of the scheme depended upon every man dipping all his cattle regularly.

Yeoman believed that compulsion without education was a poor foundation for success, and as the ultimate success depended upon the continued goodwill of each individual dipping cattle, he was most anxious to reach a much wider audience than he had been able to influence by the traditional methods already employed, and so he turned to the film, which always drew great crowds.

Daylight projection of *Smallpox*.

The Film Research Officer who made the film, and the Veterinary Officer who asked for it were in one mind on many matters, not the least important being the need for a simple aim, and so the purpose of the film was to show the African what happened at a dip. In order to relate this to East Coast Fever, the film started with an all too common experience, a man entering his cattle boma to find a sick beast. The film goes on to show the well-known symptoms, and the diagnosis of East Coast Fever is linked with tick infestation. By the analogy of washing clothes the audience is introduced to the idea of washing cattle with a medicated solution which kills ticks. This is shown to be harmless to man and beast. In editing the film an actual shot of an animal entering the dip, going through it, and emerging unscathed the other side, all in the one shot, was delayed towards the end of the film to create tension, and proved most effective.

The technique of use sprang from the classroom, for the Film

Spectators watching daylight film show.

Research Officer had been convinced for a number of years that people unused to the cinema find it difficult to follow a moving picture and a commentary at one and the same time, and to this end he advocated that all instruction should be in the form of a story with emphasis upon the visual material as the medium for conveying essential information. It is but a short step to make the first showing of the film a silent one, and after giving the audience time to ask questions, to play the film again with its commentary. This always brought a great gain in attention, and at no time appears to have bored the audience, rather the reverse, for they welcomed the chance to understand thoroughly what they were looking at. During question time, if the answers were given in the commentary to the film, we directed the attention of the audience to this fact, which made them all the more attentive during the second showing.

What were the results ? Of statistical data there are none. However, it was estimated that as a result of the campaign with which the film was associated, there was an increase of 50 per cent in voluntary dipping. Villages asked to see the films again ; those who had been left out demanded a visit, and in every audience observers overheard people saying: "I didn't know cattle could

swim". One unexpected reaction was the interpretation given to use of the cinema. It went something like this: "If the Government think dipping so important that they have made a film about it and are showing it to us, then dipping must be very important indeed". After all, a film show is something of an event in the bush.

The Veterinary Officer in charge of the scheme was so convinced of the value of the film in affecting the psychological climate that another one has been made about the economics of the scheme, and is now undergoing test showings to reveal any faults. This time the commentary is on a magnetic strip along the side of the film, and is spoken by the Chairman of the Hehe Council in the tribal language. Our conversion to "striping" was due to experiments conducted with a magnetic sound projector loaned to Tanganyika by Unesco in the early days of manufacture. *Dipping* was shown in another area where a scheme was being planned, but it received a poor response. Whether this was due to the use of a film made for a specific set of circumstances in a specific area, or due to an unfavourable political climate, is a matter of speculation. Or it may have been bad timing, for an important factor in the success of the film in the Iringa District was its timing. A few months later its effect would have been much less.

THE CENTRAL COUNCIL FOR HEALTH EDUCATION *has introduced an Associate Membership Scheme to serve local and national bodies of all kinds outside the United Kingdom. Membership includes a Consultative Service, i.e. advice and information on all aspects of health education; information on technical aspects of preventive medicine and education required for health education; assistance and advice to students of Health Education and Public Health visiting the United Kingdom. Study tours in all aspects of health education are also arranged for students proposed by Members. A complete set of C.C.H.E. publications is sent to those joining the Scheme, followed by regular monthly despatches of new publications, journals, notices of C.C.H.E. activities, and any material felt to be helpful. For full details, apply to C.C.H.E., Tavistock House, Tavistock Square, London, W.C.1.*

TECHNIQUE OF FILM ADAPTATION

A brief outline of the techniques developed by the authors at the Patzcuaro Fundamental Education Centre

By JULIA AND SIMON SINGER

THIS presentation of the techniques used in the application of the "film adaptation method" must necessarily commence with a careful examination of the problems that first led us to develop this method.

The preliminary report of the Sub-Committee on Aids and Agents of the Unesco Audio-Visual Aids Conference states in part "The Field Worker is the key person in fundamental education work".

At first glance, this seems a gratuitous piece of information, until, on close examination, we discover that this "key person" is more often than not ill-prepared educationally, ill-equipped, badly supported in terms of funds, materials and apparatus, overworked and badly underpaid. His main source of strength is generally his own sincere devotion and enthusiasm. Consequently, in considering the type of audio-visual aids that should be recommended for him to produce and use, we listed certain practical criteria:

1. Ease of acquiring the necessary production and utilisation skills.
2. Low price of required materials, i.e.: film, cameras, etc.
3. Availability of raw materials.
4. Minimum cost of production and production tools.

And most important of all:

5. High level of audience effectiveness.

Our next important point for consideration was to discover in what specific terms audio-visual materials could effectively be used in fundamental education work. We developed the following list:

1. To stimulate, motivate, excite interest.
2. To focus attention on a single problem.
3. To give specific information and instruction.
4. To enlarge the area of social and mechanical experience.
5. To bring general information.
6. To help develop a "space and time" concept.

The very earliest of our experiments led us to another vital conclusion:

"Film programmes consisting of varied subject films were, for all practical purposes, complete time-and-effort wasters."

Finally, observing the results of certain limited showings of motion pictures produced outside of our own area of work, we discovered that while such films had little real effectiveness, they nonetheless did have a limited interest value.

Our period of investigation ended with the following conclusions being drawn:

(a) In order for the field worker to achieve maximum results from his working time, his film showings should be on the basis of single theme programming.

(b) Film programmes for campaign purposes should be regularly scheduled at frequent (one week) intervals, and should have a clearly defined sequential pattern. The most effective progression we have found is: 1st period: Stimulation or motivation. 2nd period: Focusing of attention on a single problem. 3rd period: Specific method teaching, as related to the single problem. 4th period: Maintenance of interest. Each period should last as long as the specific conditions require.

(c) Maximum audience effectiveness is dependent on the careful pre-selection of film material and programme organisation in accordance with the progression scheme listed above.

Implicit in the foregoing is the need for the progressive, gradual development of a single campaign theme, and this in turn implies the use of great numbers of films. It has been our experience that only campaigns slowly and fully developed, unfolded in accordance with the receptors' ability to absorb the information imparted, are worth the tremendously costly efforts involved.

The question now arises, from what source is the field worker to obtain the great number of films which are required? By establishing our list of practical criteria, we had obviously eliminated the creation of costly film production units, requiring, as they do, highly developed skills and costly apparatus.

Experimentation with New Methods

Having been professional film-makers before entering the field of fundamental education, we decided to apply a technique known to most documentary and commercial film producers: the use of already existing films as "stock shots" (or film library material) in order to create new films in accordance with our campaign needs.

During our period of investigation we had discovered that foreign films had limited audience interest value; what was indicated, as a means of increasing the educational effectiveness of these films, was to give to such films (1) a close relationship to the needs and interests of the people to whom they were to be shown; (2) a specific function within the development of a campaign.

The two points are, of course, inter-related. In the first in-

stance our purpose could be achieved by simply rewriting the narration accompanying the film. The content of the new narration is determinable on the basis of the specific campaign functions of the film, which in turn is ascertained by the application of the scheme of progression listed above.

Application

In practice, our method works in the following manner:

1. A campaign theme, Crop Rotation or Latrines, as a sanitary and health measure, or Animal Protection and Improved Husbandry Methods, is selected.

2. By consulting the film lists generally available from the embassies or information services of the various governments, a preliminary selection of films is made.

3. The films are screened. The principal criteria for final selection are: (a) Clear visual connection to the campaign theme; (b) Clarity of visual continuity and idea sequence.

4. The selected films are assigned their *specific* respective campaign functions, Motivation, Idea Focusing, Method Teaching, Interest Maintenance.

The actual adaptation is achieved in the following manner:

1. The film is screened (as frequently as required) and an *idea sequence* list is prepared. That is, the film is divided into visual groupings. A brief description and running time for each grouping is listed.

2. A single "new idea theme" is assigned to each grouping.

3. Proceeding on the basis of utilising, and fully developing, the visual "opposites and equals", a completely new narration script is written.

An example of the principle of employing opposites and equals is found in our students' adaptation of the Canadian National Film Board production *Water for the Prairies.*

The film opens with a visual presentation of the abundant and even casual use of water in big cities, for the cultivation of home gardens, recreation and "normal" sanitation purposes. The "adapted" narration reads, approximately, "In those places where there is a great deal of water, it is employed freely for all kinds of activities, even for the recreation and diversion of children. But in places such as we live in, except during the rainy season, we have barely enough for our basic necessities. Certainly not enough for cultivation of our field that must produce if we are to live." The foregoing is, obviously, the application of the principle of opposites.

In the following visual sequence we have an indication of the beginning of water scarcity, and an excellent presentation in animation of the falling watertable.

The "adapted" narration states: "But even in countries

where there is now an abundance of water, the farmers, and even the government, are concerned with the reduction in the amount of water available. They, like us here in Patzcuaro, know the importance of water. The Canadian farmer, like the Mexican farmer, knows his responsibility and knows that the people of his country depend on him. And, what is more, the Canadian farmer, like the Mexican farmer, depends on water to grow his crops".

This, quite clearly, is the application of the principle of equals. And employing this same technique, the entire film is re-written.

It must be kept clearly in mind, at all times, that in the application of this method, the sound, or narration, is of primary importance and the image is used as a means of supporting the idea to be transmitted.

The new sound can be recorded on to the film by means of magnetic striping. This, though, has the disadvantage of being fairly costly (though not as costly as original production). Also, special permission to apply the striping material must be obtained from the lending agency. Quite obviously, in many cases such permission would be difficult and even impossible to obtain.

Interestingly enough, we have found that the striping and subsequent recordings are unnecessary and even undesirable. It is our experience that reading the narration (by means of a microphone connected to the projector) as the film is being run, is more effective and more acceptable to our audience. The principal audience reactions observed, as a result of intensive and extensive experimentation, are:

1. A greater "believability".
2. A real sense of intimacy between field worker and audience.
3. Greater freedom on the part of the audience to discuss with and ask questions of the reader of the narration at the time of showing.
4. A deeper and more lasting impression of the films on the audience because of the free use of local idiom and the reference to very special local (village) conditions.

Summary

To evaluate the worth of this method, we must measure the results by the original criteria:

1. *Ease of acquiring the necessary production and utilisation skills.* Working with five different student groups over a period of 18 months, we have found that the entire method, including the adaptation of one film, can be learned in 46 to 48 working hours (average).

2. *Low price of required materials, i.e.: film, cameras, etc.* Since all films are borrowed, there is no cost here, except transportation charges.

3. *Availability of raw materials.* A sufficient number of films

is generally available through embassies and information service offices. Unesco, and the other specialised agencies, can and must aid by requesting member governments to make more films available, and by publishing more complete and more detailed catalogues.

4. *Minimum cost of production and production tools.* In this method the only tools required are the film projector, which it is to be hoped the field worker generally would have at his disposal, a pad of paper, pencils and a pencil sharpener or a sharp knife. There are no production costs for film, cameras, lenses, film processing, editing, sound recording, actors, travel, production staff, etc.

5. *High level of audience effectiveness.* Unfortunately, for reasons completely beyond our control, we were able to undertake only one complete test of our method while at the CREFAL. In every one of the four test communities in which the campaign was carried to completion, positive results were achieved immediately. (Our means for measuring results was to grade the amount of work-pattern change directly resulting from the campaign).

There are several other points of relevance that should be mentioned:

1. It will be found that the careful employment of the progression scheme listed above will reduce the number of films to be adapted within any campaign series.

2. The strict application of the progression scheme listed above will result in deeper, more complete audience absorption and more lasting results.

3. A campaign series, once started, must be faithfully and regularly presented until it is completed.

4. The introduction of non-related films, or other audio-visual materials, will destroy the idea-transmission continuity and, in consequence, the total effectiveness of the campaign series.

THE EFFECTIVENESS OF FILMS AS TEACHING TOOLS

Work Conducted at Pennsylvania State College, U.S.A.

By HELEN COPPEN

In 1947 The Instructional Film Research Program was established at Pennsylvania State College, U.S.A., under the sponsorship of the Special Devices Center of the Office of Naval Research, "to discover and derive principles which will govern the effective use of sound motion pictures and other related media for achieving the most rapid and complete learning". The Department of the Army has now joined the Navy in sponsoring this research programme which is directed by Dr. C. R. Carpenter. Since its inception, some 60-odd projects have been initiated and, up to date, 35 separate reports[1] have been published; in scope and range they comprise the best planned, most adequately financed piece of research into effectiveness of films yet undertaken anywhere in the world. Although the need for mass instruction of young adults has been prominently in the minds of the planners of this programme of research, many of the findings are generally applicable and are therefore of great interest to all persons undertaking teaching work of any kind. Tests of multiple question type or of actual performance are used to determine the relative teaching value of different versions of a film or of different ways of using it. A "Film Analyzer" in conjunction with a "Classroom Communicator"[2] are machines designed to record responses of about 40 people at a time drawn from many thousands of army or navy trainees, and university or high school students. Suitable statistical techniques are employed, there is effective consultation with

[1] The Reports of the Instructional Film Research Program of the Pennsylvania State College may be referred to in several libraries in Britain, including that of the British Film Institute. Copies may be bought direct from Department of Commerce, Office of Technical Services, Washington 25, D.C., U.S.A., or professional people may obtain copies through the Office of Naval Research Liaison Group, United States Embassy, Grosvenor Square, London, W.1.

[2] *The Classroom Communicator* is a piece of equipment designed by Dr. Carpenter and his colleagues to administer multiple-choice objective tests or attitude scales in such a way that the results are available directly after the conclusion of the test, and so that the experimenter can see immediately how each individual responds to each item in the test.

The Film Analyzer is a piece of equipment which can record continuously individual reactions of members of a group on a five-point scale and record the results on a chart. It is used when evaluating films.

the Graduate School of the College and other research programmes, and rigid scientific standards have been applied throughout the work. The evidence shows conclusively that (A) people can acquire skills, information and attitudes from films, and can do so from films alone, without the help of a teacher, provided they have a motive for learning; (B) to be effective films should be constructed according to certain principles and they should be beamed at a specific audience whose age, educational and intellectual level is known; (C) the teaching value of films can be greatly increased if certain practices are always observed in their presentation.

Of especial interest and immense value to teachers is Report No. 19 entitled "Instructional Film Research 1918–1950" which summarises the findings of the many investigations which have been conducted since 1918. Three broad categories are considered (1) films designed to teach a skill, such as how to tie a knot in a tent rope (2) films designed to impart factual information, such as a description of how people live in South China (3) films intended to modify attitudes; for example, the attitude of young mothers towards smallpox immunisation. In the following paragraphs I have arranged the findings (summarised) of 34 of these reports under two headings—choosing and using; I have not burdened my readers with experimental details except where they are particularly interesting.

Choosing Films

(1) Rate of development is probably the most important single characteristic to consider when choosing any film, whether to teach a skill or to give information. Most films do not allow adequate time for perception of the subject because subject experts who advise on film production often overestimate the learner's ability to acquire knowledge which to him (the learner) is quite new. Repetitions are an important aspect of this rate of development and, to be effective, repetitions of the important sequences and concepts should be built into the film in a variety of ways.

(2) In teaching skills the job should be shown on the screen the way the learner would see it if he were doing the job himself (i.e., the ciné camera should be placed behind the shoulder of the operator) and, contrary to dogmatically held belief, learning is increased if common errors and how to avoid them are shown, provided the correct action has been shown first.

(3) The pictures carry the main teaching load and films should be selected from this point of view, but it is useful to know that when the commentary uses the direct form of address (imperative, or second person), is reduced to about 100 words per minute, emphasises the crucial points to be learned, and is slightly ahead of

the visuals and at the level of difficulty suited to the intended audience, learning takes place more easily.

(4) In choosing informational films the amount of information and the speed with which it is presented (i.e., idea-density) should be appropriate to the ability of the audience. In this case four experimental versions of a film were shown to four groups of each of 3 populations, High School Students, Air Force Trainees and College Students, and appropriate control groups were used. In each case, packing more and more information into a film yielded only very slight increments in measured learning, even on second showing. In this connection, relevant introductory sequences sometimes aid learning where they tell the learner what to look for and summaries help only when they are complete enough to serve as a repetition.

(5) In choosing informational films, it is unwise to be influenced by the sophistication of style of the treatment. A film in which optical effects (such as fades, wipes, dissolves) or special effects for getting attention, are replaced by straight cuts, teaches just as effectively as a film which uses effects. A simple straightforward treatment appears to be more effective for teaching, as well as less expensive in production.

(6) It would appear that colour does not necessarily improve a film for teaching purposes. Although it is probable that liking for a film and learning from it are related, the "aesthetic value" of colour as a contribution to the effectiveness appears to be less than that of the intrinsic appeal of the subject matter; one interesting thing does emerge here. The results suggest that people are a little less likely to forget what they learn from colour films than they do from black and white, although colour does not affect initial learning. Thus it would seem that if two equally good films are available, it would be sensible to choose the colour version, but that a well constructed black and white film is better than a poorly designed colour film.

(7) The most recent report is one of the most interesting, because it recommends an idea which, though not new, is not often used, and thus suggests one way of improving instructional films. It appears that by adding titles and captions to make the organisation of a film more prominent, the film becomes more effective. In particular, in those cases where the inclusion of an organisational outline (rather like chapter headings or section headings in a book) did augment learning, most of the increase occurred with the less intelligent members of the audience. But in the case of a dramatic story-film, with provision of outline or subheadings, the advantage seems to be lost. (This general finding suggests that where the film does not already have such "chapter headings" or "section headings", the teacher should provide them in written form on the blackboard.)

(8) What little work has been done on attitude-changing films seems to suggest that a story-form of treatment, which presents people like those the film is intended to influence, in realistic settings, will encourage the audience to become emotionally involved in the action of the film; if "hero types" with high prestige are associated with the desired change, the attitudes of the audience will shift in that direction.

Using Films

This long series of experiments has shown repeatedly that good films can be used as the sole means for teaching some kinds of factual material and "performance skills" and that people learn more if they see a film twice. But the audience learn more if they have an incentive, if they know the purpose of the viewing, the importance of the film, and they understand the need to see the film. This can be achieved by telling the viewers firmly that they are expected to learn from the film, and that they will be tested. This seems to produce a mild state of "situational anxiety" which provides a motive for learning (probably more applicable to Army or Naval Groups as used in the Research project than to some other teaching situations). Testing the viewers after they have seen the film and telling them the correct answer improves learning; testing them before the viewing also improves learning and improves it even more than do two showings (where no tests have been used).

Putting together the findings from the four separate experiments, it seems that people learn most and retain most when they are told the purpose of the showing, that they are expected to learn from the film, are tested before and after the first showing, are told the results of the tests and are shown the film a second time. In addition it has been shown that printed study guides used before and after the film are helpful, but that note-taking during viewing interferes with learning.

One of the earlier investigators set out to discover whether people learn more if they are presented with information in one long film in a single session, or if they are presented with the information broken up into several short units in two or more sessions; the conclusion arrived at was that training sessions using films may last as long as an hour and still result in significant learning; long massed film sessions have not been shown to be less effective than short spaced sessions. This somewhat surprising finding, when considered beside the later ones, seems to indicate that if you don't trouble to interest the audience specially in the film (by introductions, pre- and post-tests and re-showing) it does not matter much if you show a lot or a few films—the audience learns as much (or as little) either way. It also appears that the more you learn by films the more you learn from them,

that even in simple viewing sessions where no particular motivating techniques are used, the audience acquires skill in learning from films.

Finally, of special usefulness in teaching skills (in the experiment, the skills to be learned were connected with athletics, but the results could probably be applied in many other fields) to mass audiences, where there is a shortage of instructors, it has been found that demonstrations shown by means of loop films projected on a daylight screen are as effective as live demonstrations and that coaching enhances the learning and that mental practice is useful to supplement the training. Putting together these three Reports it appears that with an instructor who can coach but not demonstrate, a class can learn skill from daylight projection of loop films and, if equipment is not available, mental practice through repeated viewings facilitates the training.

It may be observed that many of the findings conform with principles of teaching which have long been established; as this Research programme is exploring one particular method of communication and learning it is to be expected that general principles of the psychology of learning would apply here too. That they do, in no way reduces the importance of the work being done at Pennsylvania State College, nor does it relieve those who make, choose, or use films from the duty to read these reports and apply their results.

AUDIO-VISUAL AIDS CENTRE: PUERTO RICO

By FRED G. WALE

Puerto Rico is a heavily populated island. Nearly two and a half million people live on 3,423 square miles of land. Thus we live everywhere; on the tops of mountains and down in the deepest valleys. About half of us live in urban centres (the large cities and smaller towns number seventy-six in all) and half of us live on the land. This second half totals about 250,000 families averaging between five and six persons to the family. We do not live in rural villages but rather in open country. However, our rural population can be identified in a thousand communities—perhaps more accurately designated as neighbourhoods—in which groups of families, sometimes as few as 75 or as many as 300, think of themselves as having some common thread of unity. The efforts of the Division of Community Education are aimed at making this common thread stronger.

We believe that people by planning and working together can find the solution to many of their problems; that the best way to do this is by first calling fully upon their own creative efforts and that the process of developing these creative efforts into an harmonious democratic pattern is basically more important for the community than the construction of anything of a material nature. The problem, as a problem, whether it be pure water, a better road, electricity or a milk station, is less important than the dynamics of the community unleashed in the process of finding the solution to the problem. This is a somewhat different approach from that of many community education programmes. The general practice throughout the world has been to identify the physical problem and to set about solving it: drain the marsh, plough the contour, build the latrine, bull-doze the blessing of Western civilisation straight through to the village centre. The major objective of many service programmes working with urban or rural communities has been "to get something done". Usually the service agency has already decided before it enters the community what that "something" will be.

It has done this pre-planning for the community by employing professionals who know how to solve a particular problem. The presence of the professional in the community usually means that someone has decided what the community needs and has sent or

brought the professional to direct the work. The professional may go alone or with others in a team and the materials he uses will "tell" the people *why* the problem should be solved and *how* to solve it. The main purpose of this approach is to leave behind some material improvement considered by the agency as beneficial to the community as a whole.

There is nothing "wrong" with this method of working providing we know its limitations and do not claim for it more than it can produce. It is not a programme of community education, no matter how insistent we may be that "we include the people in our planning". Once you begin with this problem-solving, this "package" kind of approach, the process of community growth, of necessity, must play a secondary role.

For the Division of Community Education the "process" comes first. It is more important than the material accomplishment, for it is the mind, the heart and the spirit of the growing community. The "process" will build the community and if it is successful, the community will build the "things".

This then being our major concern from the start, we set out to find or make audio-visual materials which would serve this end. Just as a programme whose main purpose is to bring better sanitation to the community engages in a search for films that highlight the advantages of pure water and fly-proof latrines, so the Division, with its accent on the ways and means by which men live and learn together, set about the task of depicting these concepts in its audio-visual materials.

From the beginning this objective has been shared by all staff members. Films, books and posters serve the ends of the programme; not the other way around. We have a production section of three units—editorial, graphics, and cinema—where books and films are written, illustrated and produced. The staff engaged in this part of the endeavour are as rooted in the educational goals of the Division as any field worker whose activities bring him in closer contact with the community.

Thus, our books and films have never taken the direction of the "how-to-do" subjects. We do not make films or write books on why a community should solve a particular problem with the steps to follow in the solution. The themes we develop are of a more fundamental nature. We are trying to bring deeper insights into the community: (1) a greater understanding of the cultural values a people possess or may possess, (2) broader general information, and (3) advantages to be gained when people work beside their neighbours in the solution of their problems.

These are three major categories into which our audio-visual material falls. We use the dramatic documentary approach. As often as possible the stories told in book or film are the true stories of the communities, with the people reliving their experi-

ences as the actors. To date, we have produced nine programmes, which include eighteen films (nine major length and nine shorts), nine books ranging from forty to ninety-six pages, and nine posters. We have also produced ten other posters used on such occasions as Christmas festivals, book meetings and the like.

Always the theme of the book and the major film go together as a single product. They are brought to the community within the same week. The field worker announces the film showing by posters distributed throughout the community. (We silk-screen our posters in editions of 7,000). On the night of the showing he appears at the centre in his truck, is helped by the neighbours to set up his equipment and plays reels of music through his projector while the community is gathering. Then for a time, usually half an hour or longer, the community entertains itself with songs, recitations, musical numbers over the microphone. The movies follow and last generally for an hour and a quarter.

The audience at these showings ranges in number from 250 to 1,000 and averages 500. A few nights later between 30 and 40 adults gather at a designated place central to the community and spend two to three hours together reading and discussing the book whose theme complements that of the major film. At the close of the meeting each volunteer carries a number of books to distribute in the homes of his nearby neighbours.

When a film programme has covered the rural areas of our island it has been shown a thousand times (all showings are held out-of-doors) and it has been viewed by a total audience of half a million persons. When a book has covered the island it has been distributed by 25,000 persons meeting in nearly a thousand book meetings and has reached the homes of 200,000 families. This is our distribution, and it is done as one of the first steps in arousing and stimulating the citizens of our rural communities.

As the community begins to "catch fire" a more intensive area of work begins in which the field worker as a group discussion leader helps the families find the full meaning of democratic participation. As this develops and after the community has clearly defined the problem it wishes to work on, all resources bearing on this are then brought into focus. It is at this time that materials of a more specific nature may be used. Now the subject has a timeliness and meaning which would have been lost had it been introduced earlier. Such materials, fine as they are, have little effect unless they are used at the proper moment in the growth of the community.

All film stories are written within the Editorial Unit of our Production Section by two professionals, one of whom was awarded a Guggenheim Fellowship this year. All stories and articles for our books are also originals written by these two writers.

All films, with one exception, have been produced in our Cinema Unit. This includes all phases of production from script to the release print. Two of our major films have been shown at the Venice and Edinburgh Film Festivals: *Una Voz en la Montaña* in 1952 and *El Puente* in 1954.

All illustrations for books and all art work for posters and films are produced in our Graphics Unit. This Unit includes silk screen and multilith operators and five professional artists, one of whom is currently making our first animated cartoon. One of these artists has also been awarded a Guggenheim Fellowship this year. All members of these three production units are Puerto Ricans employed full-time in their respective capacities within the programme.

The Division has a field staff of forty group organisers and seven field supervisors. The process of selecting and training these workers is a story in itself and is, of course, a point of major concern, for only through the day by day endeavours of these men is the work of the Division maintained. During the initial three months of training, the field worker is given instruction in the operation of the equipment he carries to the field. He is taught how to operate a projector and the function of all the various parts that go into making a film showing satisfactory from a technical point of view. However, the pitch and quality of his voice over the microphone are less important than the words he says. The out-of-focus projection may have less lasting effect than a distortion in the way he meets any one of a dozen situations that may occur during the film showing. Indeed the mechanics of a good operation, important though they are, can be mastered in relatively few lessons. As can be well understood, the major emphasis in all training sessions is on matters of a more fundamental nature, for the field worker is an educator not a projectionist.

Thus it is seen that all audio-visual materials made and used by the Division are directly focused on a specific use within its programme. A production plan of subjects to be developed is laid out a year in advance by a Programme Committee made up of staff members from all units. Monthly meetings of this committee review all progress within the Division ; field activities and research as well as materials under production. In a paper necessarily as short as this, it is difficult to give adequate details on how such a committee functions. If the reader seeks additional information on this or on other points touched on above, the Division* will be glad to respond to any request.

* Division of Community Education, Department of Education, Puerto Rico.

AUDIO-VISUAL AIDS CENTRE: CEYLON

By RICHARD ADAMS
Audio-Visual Section, Unesco

THERE is a tendency in many countries nowadays to consider that mechanical media and textbooks are the only audio-visual aids which may be termed progressive and that any means of presentation used in former times or so-called primitive areas are outdated, but it is not wise to throw anything overboard without considering first how it may still be used to some real advantage. On this Project there has been an effort to try everything that can be possibly used as an adjunct to Fundamental Education.

We have found puppet shows and flannelgraphs very popular here, though to my knowledge nobody seems to have used them in this district before we came. The original puppets were made in one of our earlier teacher training groups, and with considerable amount of rehearsal I got both teachers and teenagers to put into their manipulation and line-reading as much as possible of the elements of good timing, expressive gestures and effective use of dialogue, demonstrating step by step how necessary these things are if you want to bring out the best audience reaction from the standpoint of entertainment and instruction.

Most of the trainees from various Government Departments have enjoyed making these simple hand puppets of papier maché, wood and straw, to take back to their own places. The little figures seem to have a universal appeal among the sophisticated and unsophisticated, and even the sudden appearance of a puppet from out of the handbag of a person giving a talk on visual aids will always bring about a sympathetic audience reaction.

In our puppet shows I use just flat wooden scenery straddling the pole of the curtain which hides the puppeteers. I find that most people handle fist puppets best by leaving the original stick in the neck and using only the thumb and forefinger for the arms, the rest of the hand holding the wooden stick.

Puppets not only add entertainment to teaching, which is valuable in areas where people are not studious by nature, but they also save the time required to draw the same figures and backgrounds over and over as one does in a comic strip or story poster, while their gestures and dialogue save the time spent on lettering sub-titles. And since they bring both the eye and ear

into play, it makes a double impression at one and the same time. In fact much of the motionless, voiceless media like posters can be better used to give emphasis to active workshop participation, or even to community drama or puppet show announcements. Since songs are a normal part of any play here, we add them to the puppet shows also. I sometimes use the tape recorder during rehearsal to show them how to improve their chances of getting themselves across to the audience, though we can only use the recorder at the Centre where we have current every day after 5 p.m.

The flannelgraph I use in a number of ways:

1. Cut out according to the outline of a figure which I draw on bristolboard, with bits of flannel in various strategic positions on the back so as not to waste the material.

2. As oblong 7 in. × 8 in. bristolboard cards with poster-painted drawing in the centre and some flannel on the back. The bright colours carry quite a distance. The shaded edges of some figures give a three-dimensional effect, while the heavy black outline in other series gives a stained glass effect. In these latter I use an adaptation of some of the old frescoes, so as to be in keeping with Ceylonese background. They can also be used with the Bausch and Lamb opaque projector which we have, to throw pictures of any size on a wall when we take this simple and useful machine out with the generator and cinema projector. These pictures are made up in series with a story commentary and resemble filmstrips or slides in effect, except that the outlines and colours of these can be better in quality than handmade filmstrips, since they are drawn on a larger scale.

3. As puzzle flannelgraphs where each frame is put together exactly section by section, something like a jigsaw puzzle except that it is cut according to the logical continuity of the story.

4. As a combination of flannelgraph and movable opaque projector slide. In these only one background is needed, but in duplicate. It is glued to a 7 in. × 8 in. bristolboard card, the upper side of which has been covered with white flannel. Only two or three characters need to be used for the whole story or play, and since many combinations of scenes or frames can be made up from a dozen or so different facial expressions or body postures of these characters, a lot of time is saved in drawing or painting. In fact, it was due to lack of time that I first made up this type of story play. These little figures are painted on 1 in. × 1/2 in. bristolboard cards with bevelled edges, one in bright blue costume and the other in bright green, one with a moustache and the other "clean-shaven" and with little hair on his head, and each with a different type of nose. This marked contrast makes it easier for the village "artist" to get a sharp contrast in copying when he hasn't the ability to draw faces that

really look much different from one another. Each little piece of bristolboard has a numeral in the lower corner and the figures can be kept in order in a cardboard rack with 3 parallel slots so that the assistant opaque-projector man can quickly arrange the next scene while the other is projecting and giving a lively commentary or dialogue for the preceding scene. These can be done just as easily with larger flannelgraphs and without the projector —even at night with the help of one or two oil lamps spotlighting the flannel background and shaded from the audience's eyes by a piece of tin. They can also be photographed with colour film, using the transparency just as it comes back from processing as a filmstrip or slide. In all cases the figures have a bit of flannel on the back. Innumerable episodes can be written around the same two characters just as in the usual comic strip but the general appearance is more of the quality of a Turkish shadow puppet play.

In the large pure-flannelgraph version, incidentally, each subsequent scene can be changed on a second flannelboard by an assistant behind a curtain in contrast to the more explanatory type of flannelgraph (built up in front of the audience) used in teaching a subject where no dramatic form is needed.

I have used large story-posters in bright poster-colours also, following this shuttle method by having the scenes slide along a taut cord from behind a curtain.

Among other visual aids I have been using and experimenting with are the simple stick figures which almost anybody can do for teaching, but with more human expression in the face or in the more dynamic movements of the body. A bit of thickening in colour adds flesh and clothing to these whenever desired. The monotony of black and white figures can be varied also by just a spot of colour to emphasise part of the text and the equivalent part of the illustration. Among other time savers I am experimenting with are the making of filmstrips in black and white by painting the original drawings with white paint on black backgrounds and then photographing them with a 35 mm. camera and using the negative as it is.

Other visual aids I have made up for our area are such things as:

1. Maps of the district, with jeeptracks, roads, streams to cross, etc., made on three different scales (freehand with the help of latitude and longitude lines), the smallest of which prints on our Swedish duplicator in half a dozen colours by simply putting different coloured carbon paper under the drawings. This machine prints with methylated spirits and is not messy like the mimeograph machine (but is also not as fast).

2. We have been putting out weekly folders (a folder gets more care and attention than a sheet) for new literates and Young

Farmers Clubs. We choose a story for the inner pages, which is popular, or items of interest to average readers—preferably those which lend themselves to four or more pictures. Then I make up the illustrations on a stencil and run it off.

3. The original symbol of the Young Farmers Clubs—a young elephant with a bowl of plenty on his back. This is a popular animal and the symbol is now used all over Ceylon for the Young Farmers Clubs.

4. The design for a challenge shield for the Young Farmers Clubs—one for each province.

5. Posters of various kinds—story posters divided into frames like comic strips but with more clear-cut and simpler drawings, and other types of posters for various departments working with us.

6. Posters and teaching charts and flannelgraph cutouts for village activities in the "training-for-everybody" programmes, one of the most popular being clothes-making, since many villagers have lost the art and waste money on bad-fitting garments.

7. We are now making up every type of flannelgraph and pictograph for all the different government departments working with us, on almost every picturable item connected with rural life.

8. Three-dimension models with the Health Department and teacher trainees.

9. Tape recordings of Sinhalese folksongs.

10. Photographs of various activities.

11. I am trying to work out gradually, whenever there is any spare time, the scenarios for short simple teaching comedies on how and how not to do things, using the old Chaplin broad comedy. I shall shoot these in daylight, outside, with simple, uncluttered backgrounds, so that the main points stand out clearly, and with a lively commentary by one of our translators in person, I believe we shall have some good entertaining teaching films exactly suited to our district.

12. Another "spare time" job is the illustrating of another primer for adult rural leaders "Parables of the Lord Buddha".

13. Lettering in 3 languages.

14. A label for co-operatively made woodapple jelly in our villages, where this fruit grows in abundance. This label can also be used for fruit-growing propaganda.

On Sunday mornings there has been a group for over a year now who come for painting classes. With the children of this group I have tried to get them into the habit of drawing a new story every week, first in stick-figure form and then thickened with colour. Each child draws up about half a dozen or more scenes from each week's story. The older people have been more interested in still life, scenery and portraiture, though some of the Irrigation Officers, when they were here, used to try and draw up

the illustrations they would be using in their rural work. On Sunday evenings I run off the four new films I get every week from our loaning agencies in Colombo, partly for us at the Centre to see what is suitable for the week's booking, partly for the translator to get his first impression of the commentary; partly for recreation and audience reaction of the mixed group of people who live near the Centre.

I have one assistant only. He is a Sinhalese villager and is a very good mechanic, especially in the matter of keeping audio-visual equipment in good condition, which is an important item with our jeep tracks, dust, mud, rain, insects, etc. We have cinema programmes almost every night and often both generators are out in two different places.

I make up daily detailed reports on films and audiences, and it is because of those daily reports and our careful handling of films that we get such excellent co-operation from our loaning agencies.

In his spare time, my assistant can help with lettering or copying maps, and I have shown him how to do one-colour silkscreening. Incidentally, this last item has been rather troublesome. In the first place, we had a hard time getting a frame made that would not warp, and we still have only masonite for a base. Though basically simple, silkscreening requires too much time when you are shorthanded, in cleaning off the colour with solvent and then washing off the glue with water for each part of the picture whenever a second or third colour is to be used. Considerable practice is needed also to get an apprentice to learn the right proportions of colour and solvent and retarder even if you want to run off several dozen with just the outline alone. Unless you are putting out a very large number of any one poster, it is more time-saving to do just the outline in one colour and to fill in the rest by quick brush-strokes by hand.

We have a great many visitors from all parts of the world for short and long periods. Of course this makes for additional interruptions, but nevertheless they are always welcome, for many of them are not only interesting people in themselves, but they are also very much interested in the way in which the problems and needs of this part of the world are dealt with.

VISUAL AIDS CENTRE: LONDON

JOHN BURTON, B.A., M.R.C.S., D.P.H.

For some 20 years the Central Council for Health Education has been providing the health departments of local authorities in England, Wales and Northern Ireland with visual materials. Briefly the aims of the centre have become: (1) To stimulate local production whenever possible. (2) To produce centrally media which cannot economically or technically be produced locally.

The first aim is realised mainly by providing short practical training courses for health personnel in the design and manufacture of posters, flannelgraphs, scripts for filmstrips, etc. These are carried out by members of the CCHE staff, in the local setting, and the exercises are based on local problems. They reveal much local talent and create considerable enthusiasm and confidence. The various methods of use of the aids are discussed and the integration of aids for different purposes is studied: the visual presentation of a subject such as foot health may be considered from the point of view of a poster, leaflet, filmstrip, film, bookmark, flannelgraph and exhibition, as a co-ordinated whole.

Few health departments can afford to employ full-time experts in visual aids, so the brunt of the work falls on the health workers themselves. To assist them with ideas and the difficult and time-consuming work of designing, patterns for flannelgraphs are produced centrally. They still require finishing locally and this gives the operator a personal sense of possession.

In addition, a service exists for advising local authorities on the design and layout of exhibits and exhibitions and the utilisation of local resources. The execution is left to local talent. Again the expensive items of exhibition funiture are held centrally and loaned as required. A certain number of mobile ready-made exhibits on such topics as immunisation, clean food, the work of the health visitor, are circulated regularly for use in clinics, waiting rooms, etc., and can also be used as supplementary material for exhibitions.

The second aim is to produce centrally such articles as posters, illustrated leaflets, filmstrips and films, which could not be produced locally for economic or technical reasons.

The Council employs no full-time artists. Following detailed discussion between staff members a briefing for the work is produced and outside professional artists are commissioned.

Materials are sold to users and the centre is thus self-supporting.

APPENDIX A

EVALUATION SHEET

This form has been designed for the use of those requested to evaluate a film or filmstrip. The evaluation should be done by a panel of at least five people experienced in the subject, in film technique and the use of the film. An example of a completed evaluation sheet for the film *The Cathode Ray Oscillograph* follows :

Evaluation Sheet Reference No. 53–93b.

TITLE : The Cathode Ray Oscillograph.

TYPE : Instructional, analysis of scientific facts and technical implications.

GRADING : Highly recommended for higher and technical training.

EVALUATOR : S.F.A. Panel for Technical Films. Date 19.9.53.

A. CONTENT — B. EVALUATION — C. NOTES.

A. The necessity for a new instrument for radio research is demonstrated by showing the failure of needle and mirror voltmeters at frequencies much below those found in radio research. The construction of the cathode ray oscillograph is clearly explained and the function of each part demonstrated, as well as the use of the time base and the application of the oscillograph, for determination of the height of the ionosphere and the degree of ionisation of the upper atmosphere.

B. Authoritative and convincing. Photography excellent throughout and commentary to the point. Apart from the application of the general theory of the compounding of wave forms and single periodic vibrations, the electrical aspect of the film is valuable in the hands of lecturers appreciating the full implication of the production.

C. The analysis of the film in *Physical Journal*, Vol. 6, No. 212, London, Oct. 1952, p. 805, is recommended to lecturers for reading before using the film.

This final evaluation sheet is based on the viewer's report form which follows.

VIEWER'S REPORT FORM (FILM)

As used by the Scientific Film Association

CONFIDENTIAL

1	Name of Viewer		Title of Film		
	Qualifications of Viewer with special reference to this film				
	On this subject I am	Expert	Familiar	Interested	Never Interested
2	a Up-to-dateness of the film	Dating not important	Up-to-date	Several out-of-date ideas	Entirely-out-of-date
	b Scientific or other errors (also over page)	None noticed	Occasional surprises	A few errors or apparent inaccuracies	Misleading
	c Whole-part balance	Good whole-part balance	Good whole but parts not sufficiently clear	Parts distinct but whole rather woolly	Planning of the film is poor
	d Over-all judgment of technical content	Excellent	Acceptable	Usable	Useless
3	e Cinematic quality	High level throughout	Standard satisfactory	Barely adequate achievement	Poor quality
	General notes on Photographic or cinematic quality (also over page)				

4	f Film commentary	Accurate	Clear	Muddled	Inaccurate
	g (if any)	Stimulating	Interesting	Talking down, dull	Irritating
5	h Presentation	Clear	Fairly clear	Not clear	Confusing
	i	Interest maintained throughout	Interesting	Uninteresting	Boring
6	j General opinion of film				

	Grading - Audience	Recommended	Suitable	Unsuitable
k	Higher Education			
l	Adult Training			
m	Specialists in the subject-matter of film			
n	Audiences with Scientific Interests			
o	General Audiences			
p				
q				
r				
s				
t				
u				

Specially suitable for the following audiences:

For catalogue purposes the same film should be described in the following way. (See *International Standard System for the Cataloguing of Educational, Scientific and Cultural Films and Filmstrips*, UNESCO, April 1954.)

THE CATHODE RAY OSCILLOGRAPH (Film) U.K. 53-93*a*

Radio Research Board, London, U.K., 1952. Made by Gaumont-British Instructional.

32 min., sd., b. & w., 35 mm., 16 mm. (History of Engineering Series, No. 3.)

Related filmstrip : Cathode Rays.

Summary : Construction and application of the oscillograph in radio research.

Credits : Technical adviser : Sir Robert Watson-Watt.

Contents : The necessity for a new instrument for radio research is demonstrated by showing the failure of needle and mirror voltmeters at frequencies much below those found in radio research. The construction of the cathode oscillograph is clearly explained and the function of each part demonstrated. The use of the time base and the application of the oscillograph, the determination of the height of the ionosphere and the degree of ionisation of the upper atmosphere are also shown.

Comments : Authoritative and convincing. Photography excellent throughout

and commentary to the point. Apart from the application of the general theory of the compounding of the wave forms and simple periodic vibrations, the electrical aspect of the film is valuable in the hands of lecturers appreciating the full implication of the production.

Type : Instructional.

Grading : Higher and technical teaching ; highly recommended.

Evaluator : S.F.A. Panel for Technical Films.

Suppl. Details on evaluation sheet U.K. 53–93b.

Versions : 1 English ; 2 German ; 3 French (sub-titles).

Owner of rights : Radio Research Board, 3 Brompton Lane, London, W.C.2.

Comm. distr. : Gaumont British Instructional, Film House, Wardour Street, London, W.1 ; 35 mm. ; B ; C.

Non-comm. distr. : Alpha Productions, 217 Belmont Lane, London, W.C.1 ; 16 mm. : Aa ; C ; E educational inst.

TV distr. : Television International, 31 Burton Avenue, London, W.2 ; Clearance image : all countries ; sound : countries Bern Conv. ; 35 and 16 mm. ; Ab.

Certified for purpose Unesco A. V. Agreement ; Certificate U.K. Ministry of Education.

FILMSTRIP ASSESSMENT

Title — Type of Notes

Subject — Date of Publication

No. of frames — Distributor

Captions

Style of Treatment : Photographs, Drawings, Diagrams, Cartoons.

Summary of Contents.

VIEWER'S REPORT FORM (FILMSTRIP)

Assessment

Appropriateness of subject for filmstrip

General effectiveness of interpretation

Technical quality of	Photo	Good	Bad
	Drawings		
	Diagrams		
	Cartoons.		
Contents :	Accurate	Yes	No
	Essential points included	Yes	No
	Laboured exposition	Yes	No

Teaching quality of : Individual frames : (note if overloaded, badly arranged or any other special points).

of : Sequences (note if badly arranged or any other special point).

Usefulness (Here note any particular sequences which are noteworthy).	*Age Range*	*Subject(s)*	*Type of Lesson*

Note : This is intended to be used as a guide sheet, for personal reference only.

Today he's in safer hands . . .

Every mother knows the danger of dirty feeding bottles and teats. But when she has Milton to keep them safe, she need worry no longer. So much simpler than boiling up water after every feed. And less danger of the bottle breaking. With Milton the bottle and teat are protected from dust, germs and flies — from one feed to the next. That's why nurses and midwives recommend it, and why, in most hospitals today, they rely entirely on

Milton

Leaflets and a film strip on 'Care of Babies' Feeding Bottles and Teats' now available from Milton Antiseptic Ltd. 42-46 Weymouth Street, London W1

NEW *NAPT* FILMS . . .

BLACK AND WHITE SOUND 35 AND 16 MM. CHARGES: 10s. per day of screening
£2 per week unless otherwise stated.

'X-ray Inspector' TIME—18 MINUTES

A powerfully descriptive film to convince people of the need for regular chest X-ray examinations. Suitable for all audiences, sophisticated or otherwise.

'Also Coming Shortly' (35 MM. ONLY) TIME—3 MINUTES
CHARGES: 5s. per day of screening
£1 per week

This is a shorter version of 'X-RAY INSPECTOR.'

'This Little World' TIME—10 MINUTES

An accurate and touching account of the role of the individual in sanatorium life—medical superintendent, patient, nurse and boilerman—all have their part to play. This film is suitable for any audience.

'Prevention is Better' TIME—15 MINUTES

This film puts the question, "What can you do to prove you are free from tuberculosis ?"
The audience is invited to join a detective hunt—the detection of tuberculosis. The film describes the preventive measures as they concern the "man in the street." Suitable for all audiences, particularly the young, in schools, training colleges, etc.

'Personal Episode' TIME—12 MINUTES

A young girl—a student at a Scottish University—is obliged to sacrifice her plans for a teaching career owing to tuberculosis. After complete recovery she remakes her life, and becomes a nurse. A charming personal story. Suitable for general audiences, particularly school leavers and their parents.

'Sanatorium Nurse' (16 MM. ONLY) TIME—10 MINUTES

A more specialised account of nursing routine. Excellent for showing to schools, youth clubs, and women's organisations, as a sequel to 'PERSONAL EPISODE.' Especially suitable for nurses in training.

COLOUR FILM IN PREPARATION (16 MM. ONLY)
TIME—10 MINUTES

'BCG-Vaccination against Tuberculosis'

Presents the principles and technique of BCG vaccination. Excellent for women's organisations, teachers, health visitors, and all responsible for children's welfare. Suitable also for doctors and medical students, as the actual vaccination is clearly illustrated.

The National Association for the Prevention of Tuberculosis

TAVISTOCK HOUSE NORTH
TAVISTOCK SQUARE
LONDON, W.C.1.
Tel: EUSton 3012-3-4

65 CASTLE STREET
EDINBURGH 2
Tel: CENtral 6527

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——. *Visual aids in fundamental education ; some personal experiences.* Paris, Unesco, 1952. Pp. 168. $1.75 ; 10s. 6d. ; 500 frs.

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C.C.H.E. Sound Film Strips

Too Old to Work?

The problem of the age of retirement of able-bodied people who wish to continue.

An Englishman's Home

Family relations where three generations live together.

The Best Education

The question of grammar school and secondary modern school education.

Fog is Officially Forecast

The problem of smog in urban areas. What can householders and industry do about it?

Does Baby Know Best?

Merits of clock feeding *versus* on demand feeding.

A Mother's Place

Should mothers of young children go out to work?

Divided Loyalties

Conflict of a 9-year-old boy's loyalties to his parents and his gang.

Mother, Can I Go Out Tonight?

Relations between a mother, father, and a 15-year-old girl.

Each film strip with record is available for purchase, price 35s. per set to subscribers to C.C.H.E., 50s. per set to others; or for hire, at 10s. per set per week to subscribers, 15s. to others.

C.C.H.E. Flannelgraph Patterns

The Birth of a Baby	5s. 6d.
Vicious Circle (food hygiene)	3s. 6d.
Nutrition and Food Hygiene	5s. 6d.
Personal Hygiene	3s. 6d.
Chains of Infection	3s. 6d.

For full details of these and other materials (posters, leaflets, etc.), write to:

The Central Council for Health Education,
Tavistock House, Tavistock Square,
London, W.C.1.

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